OPERATOR MANUAL

BASIL® 9500

Cage and Rack Washer

(10/18/01)
Rev. 3

P-122998-050

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A WORD FROM STERIS CORPORATION

This manual contains important information on the proper use of this washer. Refer to *Routine Maintenance, Section 6* for instructions in routine care of this equipment. All personnel and department heads are urged to carefully review and become familiar with the warnings, cautions and instructions contained herein. These instructions should be retained in a conveniently accessible area for quick reference. This washer is specifically designed only for the uses outlined in this manual, otherwise, safety hazards may occur.

IMPORTANT: A listing of the safety precautions to be observed when operating this washer can be found in section 1. Do not operate the washer until you have become familiar with this information.

Indications For Use

The Basil® 9500 Cage and Rack Washer is intended for use in the sanitation of soiled, reusable animal care devices such as cages, racks, debris pans, feeder bottles and other miscellaneous items by providing thorough cleaning, and optional drying.

This washer is specifically designed to only process goods as outlined in this manual. If there is any doubt about a specific material or product, contact the manufacturer of the product for recommended washing technique.

Advisory

STERIS does not intend, recommend nor represent in any way that this Basil 9500 Cage and Rack Washer be used for the sterilization of any animal care or other device which has been contaminated with pathogenic microorganisms.

Any alteration of the washer not authorized or performed by STERIS Engineering Service which could affect its operation will void the warranty, could adversely affect washing efficacy, could violate national, State, and local regulations, and could jeopardize your insurance coverage.

Service Information

A thorough preventive maintenance program is essential to safe and proper equipment operation. You are encouraged to contact your STERIS representative concerning extended service maintenance agreements to give your washer planned maintenance, assuring equipment performance according to factory specifications.

A global network of skilled service specialists can provide periodic inspections and adjustments to assure low-cost peak performance. STERIS representatives can provide information regarding the Annual Maintenance Agreements.

STERIS carries a complete line of accessories for use in this equipment. A STERIS representative will gladly review these with you.

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LISTING OF WARNINGS, CAUTIONS AND SYMBOLS

1

The following is a listing of the safety warnings and cautions which must be observed when operating or servicing this unit. **WARNING** indicates the potential for danger to personnel and **CAUTION** indicates the potential for damage to equipment. These precautions are repeated in whole or in part, where applicable, throughout the manual. Carefully read them before proceeding to use or service the unit.

WARNING – BURN HAZARD:

After pressing STOP/RESET touch pad, wait until water flow stops before opening doors. Hot water/ steam may be sprayed through door opening if doors are opened too soon.

Except for emergency, do not open door when cycle is in progress. In an emergency, first stop cycle by pressing the EMERGENCY STOP PUSHBUTTON and wait for water flow to stop. Wear appropriate personal protective equipment (PPE) whenever reaching into or entering wash chamber.

Except for emergency, do not open door when cycle is in progress. In an emergency, first stop cycle by pressing the STOP/RESET touch pad and wait for water flow to stop. Wear appropriate personal protective equipment (PPE) whenever reaching into or entering wash chamber.

Inner surfaces of washer are very hot after cycle completion. Operator should wear appropriate personal protective equipment (PPE) and avoid all contact with inner walls when entering chamber to unload washer.

WARNING – FALL HAZARD:

To prevent falls, keep floor dry. Promptly clean up any spills or drippage.

WARNING – PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD:

Regularly scheduled preventive maintenance, in addition to the faithful performance of the minor maintenance described within this manual, is required for safe and reliable operation of this equipment. Contact STERIS Engineering Service to schedule preventive maintenance.

Only fully qualified service personnel should make repairs and adjustments to this equipment. Maintenance done by inexperienced, unqualified personnel or installation of unauthorized parts could cause personal injury, invalidate the warranty, or result in costly damage. Contact your STERIS sales or service representative regarding service options.

To open doors from inside wash chamber, press Emergency Safety Guard Rails. Washer operation will automatically stop. Then, push firmly between door panels using shoulder and upper arm, applying upper body force. Do not push between the two doors, but between the door panels.

To test or demonstrate Emergency Exit Safety Doors, first press Emergency Stop pushbutton (located under control) or Emergency Safety Guard Rails (inside wash chamber) to turn power OFF. If power is still on while adjusting or servicing doors, the photoelectric sensor will detect the movement of the door panels and doors will open automatically.

Before servicing or cleaning exterior of unit, always press EMERGENCY STOP pushbutton to de-energize unit.

Always wear appropriate personal protective equipment (PPE) when cleaning or removing debris from bottom of the wash chamber and over the suction plate.

(See next page for additional Warnings and Cautions)

WARNING – PERSONAL INJURY HAZARD:

When doors are closing, a pinch point is created at the hinges. Keep fingers away from door hinges in order to prevent pinching.

Never perform cleaning of wash chamber until full cycle has been completed. If cycle has not been completed, contaminated debris or water may remain in the bottom of the wash chamber

Keep hands/fingers away from closing doors in order to prevent crushing between the two doors.

If doors are still slightly open (less than 2 inches [5 cm]) when power is restored after a power failure, control will apply pressure to complete closing. Lock building electrical supply disconnect switch in OFF position and close unit air supply when opening doors after a power failure.

WARNING – ELECTRICAL SHOCK AND/OR BURN HAZARD:

Disconnect all utilities to washer before servicing. Do not service washer unless all utilities have been properly locked out. Always follow local occupational health and safety regulations, as well as electric and plumbing codes.

WARNING – CHEMICAL BURN AND/OR EYE INJURY HAZARD:

Wear appropriate personal protective equipment (PPE) when using a descaling product. Avoid contact with eyes or skin. If spilled or splashed, flush with water for 15 minutes. If swallowed, DO NOT induce vomiting. Administer an alkali with plenty of water. Seek medical attention immediately.

Always use non-foaming chemical for effective cleaning and proper pump and water level control operation. Follow manufacturer's recommendations for amount of chemical to be used.

Washer chemicals are caustic and can cause adverse effects to exposed tissues. Do not get in eyes, on skin or attempt to ingest by mouth.

- **Read and follow the precautions and instructions on the chemical label and in the Material Safety Data Sheet (MSDS) prior to handling chemicals, refilling chemical containers or servicing the chemical injection pumps and lines.**
- **Wear appropriate personal protective equipment (PPE) whenever handling chemicals or servicing chemical injection pumps and lines.**

CAUTION - POSSIBLE EQUIPMENT DAMAGE HAZARD:

Always use a silicone lubricant to lubricate squeeze tubes. Petroleum-based lubricants, such as Vaseline® or grease, will cause squeeze tubes to melt.

When choosing a chemical, select one with a low chloride content. Chloride is harmful to stainless steel and will deteriorate washer.

Always position Central Header Manifold over the manifolded coupling system before operating unit. If manifold is not positioned correctly, damage may result and unit will be unable to effectively wash load.

Always position Bottle Washing Cart over central water inlet connector before operating unit. If Bottle Washing Cart is not positioned correctly, damage may result and unit will be unable to effectively wash load.

(See next page for additional Warnings and Cautions)

Avoid product damage. Always select a cycle appropriate for the items being processed.

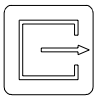
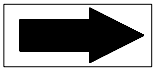
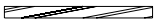
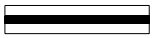
Use non-abrasive cleaners when cleaning unit. Follow directions on containers and rub in a back-and-forth motion, in same direction as surface grain. Abrasive cleaners will damage stainless steel. Cleaners rubbed in a circular motion or applied with a wire brush or steel wool on door and chamber assemblies can be harmful to stainless steel. Do not use these cleaners on painted surfaces.

Keep away from doors to prevent load detection sensor from stopping doors from closing.

Always leave plenty of space between load and doors. Leaning load against doors will damage doors and also prevent them from opening or closing.

Remove all cellulose type bedding from cages and pans before processing. Cellulose bedding may clog filters and piping.

Definition of Symbols

Symbol	Definition
	Transfer of Heat, Hot Surface
	Protective Earth (Ground)
	Warning! Risk of Electrical Shock
	Electrostatic Sensitive Device
	Attention, Consult Manual for Further Instructions
	Warning! Do not step here.
	Fork Lift: Place forks of the fork lift here.
	Safety Exit: Push here in case of an emergency.
	Rotation: Direction of the rotating device.
	Emergency Stop Guard Rails: Push to stop the washer and de-energize control.
	Load delimitation: Do not place load over these marks.
Preset at Factory	Factory adjustment: Do not adjust.
A	Amperage Rating of the unit
V	Voltage Rating of the unit
~	Alternating Current
kW	Power Rating of the unit
Hz	Frequency of the unit
ϕ	Phase of the unit

An Equipment Drawing, showing all utility and space requirements, was sent to you after the order for this equipment was received. The clearance space, specified on Equipment Drawing, is necessary for proper installation, operation and maintenance. Uncrating and Installation Instructions were provided with the washer. If any of these documents are missing or misplaced, contact STERIS giving the serial, equipment and model numbers of the unit. Replacement copies will be sent to you promptly.

After installing the washer according to the Uncrating and Installation Instructions, complete the following checklist to assure complete and correct installation. Or contact your STERIS representative to schedule a technician to test your installation and demonstrate proper equipment operation.

Installation Checklist

- ❑ Shutoff valves (not by STERIS) capable of being locked in OFF position only for maintenance purposes, installed on steam, air and water lines and in compliance with local occupational health and safety regulations, as well as electric and plumbing codes.
- ❑ Disconnect switches (not by STERIS) capable of being locked in OFF position only for maintenance purposes, installed in electrical supply lines near the unit and in compliance with local occupational health and safety regulations, as well as electric code. Disconnect switches must bear the identification of the equipment to which they are connected.

NOTE: If unit is installed next to other equipment, shutoff valves and disconnect switches should be located so that service can be shut off to one piece of equipment at a time.

- ❑ Unit positioned, as shown on Equipment Drawing, with required clearance space and in relation to building supply lines.
- ❑ Washer is level.
- ❑ Building cold water line supplies water to unit as specified on Equipment Drawing (required only if Cold Water Injection, Drain Discharge Cooldown or pH Neutralizing System is present).
- ❑ Building hot water line supplies water to unit as specified on Equipment Drawing.
- ❑ Building steam line provides steam to unit as specified on Equipment Drawing.
- ❑ Building condensate return line is connected to unit as specified on Equipment Drawing.
- ❑ Building air line supplies air to unit as specified on Equipment Drawing.
- ❑ Building waste line is available as specified on Equipment Drawing.

(continued)

- ❑ Building ventilation system is connected to unit as specified on Equipment Drawing.
- ❑ Electrical supply for unit is as specified on Equipment Drawing.
- ❑ Floor surrounding unit has a non-slip surface (not by STERIS).
- ❑ Check for any construction and/or installation debris, inside and outside wash chamber, under floor gratings and sump suction plate. Clean or discard.
- ❑ Verify all electrical connections, to make sure that they are plugged in and/or connected.
- ❑ Verify electrical boxes. Make sure that there are no foreign objects inside electrical boxes. Also check for any unconnected wires.
- ❑ Verify all clamps and unions on washer and mechanical core. Tighten if necessary.
- ❑ Verify spray headers and spray header cables. All cables are properly tightened.
- ❑ Verify that headers travel to the top and bottom of the wash chamber without touching top or bottom pulleys and guides. Verify proper installation.
- ❑ Inspect the doors for alignment and smooth movement. Inspect door cables for tightness and proper installation.
- ❑ Check that all excessive silicone has been removed.
- ❑ Check that all the protective paper has been removed from stainless steel.

IMPORTANT: After a few weeks of operation, inspect unit for leaks. Re-tighten all clamps and connections.

Technical Specifications

These specifications are intended to describe the technical information given on the nameplate of your washer and to state other relevant information. Check Equipment Drawing or Identification nameplate, located on frame of mobile mechanical core, below main electrical box, for proper voltage and amperage.

This unit operates either on 208 V~, 3-phase, 60 Hz, 380/400/415 V~, 3-phase, 50 Hz or 480 V~, 3-phase, 60 Hz. Refer to Uncrating/Installation Manual (P-122998-049) for proper connection.

A protective ground conductor is required (Class 1 Equipment). Installation Category is Overvoltage II.

AMPERAGE AND POWER CONSUMPTION

The maximum currents and power consumptions, for units with or without drying, are:

	kW	A
208 V	37,0	13,3
380/400/415 V	13,0	9,3
480 V	17,5	14,6

NOISE LEVEL

Equivalent Sound Pressure Level at work station (measured 1 meter away from equipment and at 1,6 meters from ground): **76.6 dB (A) for** a freestanding unit with side panels and **72.6 dB (A)** for an enclosed unit. (Results determined according to *ISO-3746: 1979 Standard: Acoustics Determination of Sound Power Levels of Noise Sources Survey Method*).

PERMISSIBLE ENVIRONMENTAL CONDITIONS

This washer is designed to give optimal results in an environment where maximum relative humidity is less than 85% and maximum operating temperature is 104°F (40°C).

Certification

This Basil 9500 Cage and Rack Washer complies with the following standards:

- **American and Canadian Standards:**
  Conform to ANSI/UL std. 3101-1 conform to CAN/CSA std. C22.2 1010.1
- **Governing Directive for the Affixing of the CE Mark:**
  Machinery Directive (98/37/CE).
- **Conformity to Other Applicable Directives:**
  Electromagnetic Compatibility Directive (89/336/EEC) and amendments (92/31EEC, 93/68/EEC), Low Voltage Directive (73/23/EED) and amendment (93/68/EC).
- **Standards applied to demonstrate conformity to the directives:**
  IEC 1010-1 (1990) A1 (1992) A2 (1995), EN 50081-2, EN 55011, CISPR 11, EN 50082-2, EN 61000-4-2, EN 61000-4-3/ENV 50140, ENV 50204, EN 61000-4-4, EN 61000-4-6/ENV 50141.

Chemical Additives Specifications

The selection of chemical additives is open for customer preference, however, in order to achieve optimal performance, the selected chemical additives must meet as a minimum, the following specifications:

Product Description	Use Dilution Range Oz/Gal (ml/l)	pH Range at Use Dilution	Other Applicable Requirements
Alkaline chemicals	1/4 - 4 (2 - 32)	9.0 - 12.0	liquid, non foaming and viscosity below 200 ccsu.
Acidic chemicals	1/4 - 4 (2 - 32)	3.0 - 6.0	liquid, non foaming, free rinsing and viscosity below 200 ccsu.
Descalers	1/2 - 2 (4 - 16)	< 2.5	liquid, non foaming, phosphoric acid based and viscosity below 200 ccsu.

NOTE: Follow chemical label recommendations for concentration of chemical to use.

NOTE: Follow chemical manufacturer's recommendations to determine the temperature of the WASH treatment.

NOTE: Follow chemical manufacturer's recommendations for the amount of chemical used according to water hardness.

WARNING - CHEMICAL BURN AND/OR EYE INJURY HAZARD: Always use a non-foaming chemical for effective cleaning and proper pump and water level control operation. Follow manufacturer's recommendations for amount of chemical to be used.

To achieve maximum cleaning efficiency, select chemical appropriate to soil type being processed. STERIS recommends the following chemicals:

- **Cage-Klenz® 100** - (Alkaline) formulated to remove urine, scale, animal fats, oils and other organic soils from cage materials.
- **Cage-Klenz® 200** - (Acidic) formulated to remove urine, scale, animal fats, oils and other organic soils from cage materials.
- **LIQUID DESCALER** - for removing scale and other hard water deposits. For use in animal care centers.

NOTE: Certain products may not be available in your area. Contact your STERIS representative for availability of these products and for ordering information.

IMPORTANT: STERIS does not promote, recommend nor endorse the use of any other type of chemical additives in the processing of articles in the Basil 9500 Cage and Rack Washer, such as drying agents, strong alkaline detergents (pH>12), alcohol rinses, and liquid germicides including hypochloric acid (bleach).

The Basil® 9500 Cage and Rack Washer is designed for high capacity, efficient cleaning and sanitization of cages, racks, debris pans, feeder bottles and other miscellaneous items used in the care of laboratory animals.

Washer is equipped with a fully-programmable microprocessor control system capable of storing up to 12 cycles for processing a wide variety of loads. The control system monitors and automatically controls all cycle operations and functions.

Before operating the washer, it is important to become familiar with the location and function of all major components and controls (see Figure 3-1).

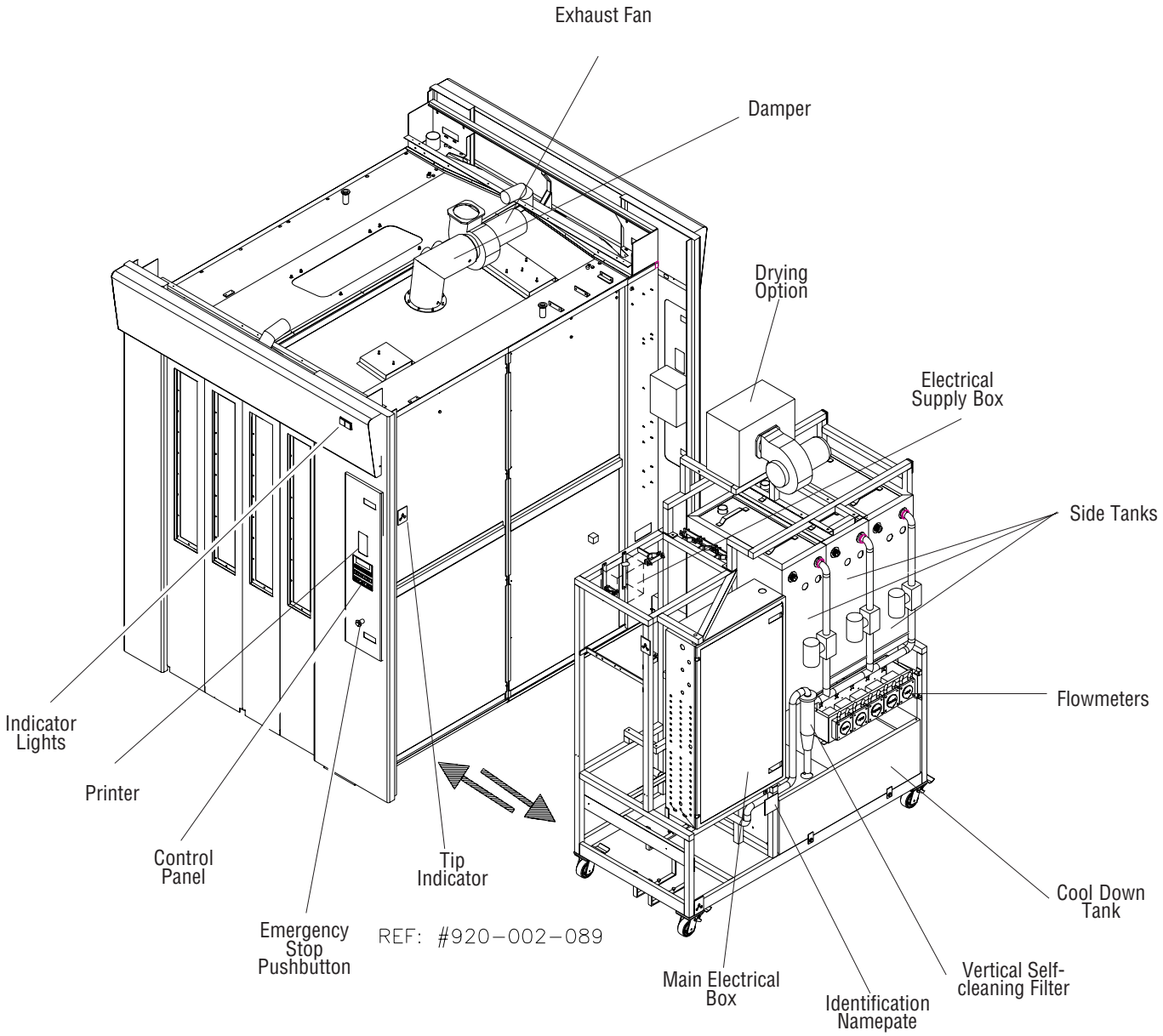


Figure 3-1. Component Identification

Power-Off/Standby Switch

Become familiar with all control locations and functions before operating the unit. (See Figure 3-1).

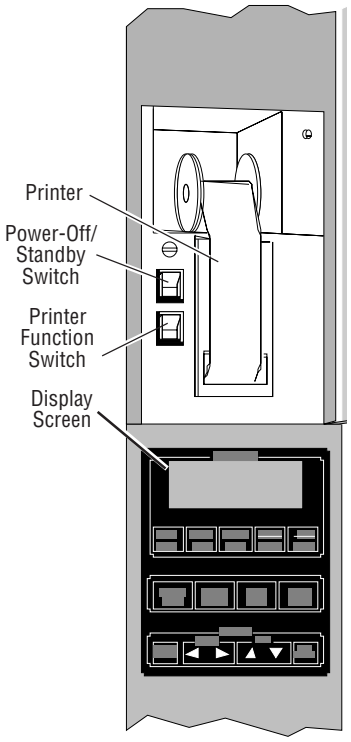


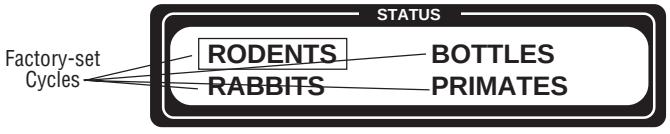
Figure 3-2. Load End Control Panel and Printer

The POWER-OFF/STANDBY switch, located behind the printer door, includes two settings which direct operation of the control (see Figure 3-2).

- **POWER** - press top portion of POWER-OFF/STANDBY rocker switch to initialize control and place control in Ready Mode. Tanks fill with water.

  When control is in Ready Mode, interior chamber light is on and display screen shows:

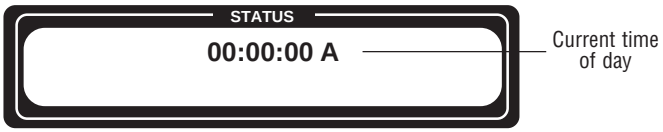
  then:



☐ *indicates flashing position.*

- **OFF/STANDBY** - press bottom portion of POWER-OFF/STANDBY rocker switch to initiate Shutdown Cycle and place control in Standby Mode.

  When control is in Standby Mode, interior chamber light is off and display screen shows:



IMPORTANT: POWER-OFF/STANDBY switch does not turn off electrical power to the unit.

NOTE: Control should be placed in Standby Mode for last cycle of the day and when washer is not in use for an extended period of time.

Main Control Panel

The Control Panel is used to direct all washer functions. It can be placed on either the load side or the unload side of double door units (see Figures 3-2 and 3-3). The operator may select and review cycles and treatments, start, stop or reset cycle operation and monitor cycle performance and washer status from the control panel.

» Display Screen

The two-line, alphanumeric screen displays cycle program data on demand, cycle performance data and operator instructions. Display screen also indicates certain abnormal conditions that may occur during a cycle.

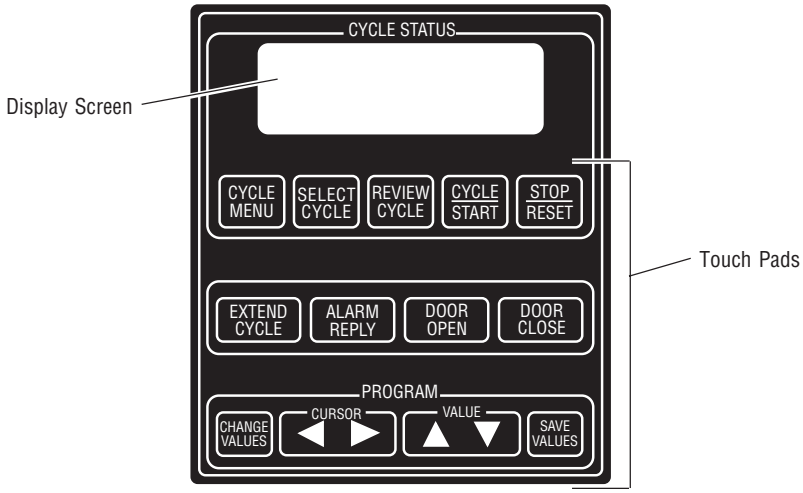


Figure 3-3. Control Panel

» Touch Pads

CYCLE MENU

- **CYCLE MENU** - Press to view the cycle menus. Three cycle menus are available.

SELECT CYCLE

- **SELECT CYCLE** - Press to select one of the four cycles available from each cycle menu.

NOTE: When a displayed cycle or treatment value is selected, the corresponding word or digit flashes.

REVIEW CYCLE

- **REVIEW CYCLE** - Press to review treatments and values programmed for a selected cycle.

CYCLE START

- **CYCLE/START** - Press to start selected cycle.

STOP RESET

- **STOP/RESET** - Press once to stop cycle operation. Press a second time to abort cycle or to interrupt opening or closing of doors.

EXTEND CYCLE

- **EXTEND CYCLE** - Available in Service Mode only.

ALARM REPLY

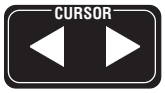
- **ALARM REPLY** - Press to stop intermittent alarm buzzer and acknowledge the displayed alarm message.

DOOR OPEN

- **DOOR OPEN** - Press to automatically open door(s).

- **DOOR CLOSE** - Press to automatically close door(s).

- **CHANGE VALUES (CVTP)** - Press to modify treatments from programmed cycles and to confirm selected values from programmed cycles.



- **CURSOR** arrows - Press to move left or right on the display screen.

- **VALUE** arrows - Press to move up or down on the display screen and, depending on selected item, press to either toggle between answer selections or to scroll through the alphabet, numbers 0 through 9, and symbols.

NOTE: Alphabet includes characters for an underline and a space (■).

- **SAVE VALUES (SVTP)** - Press to store all treatment values and cycle changes.

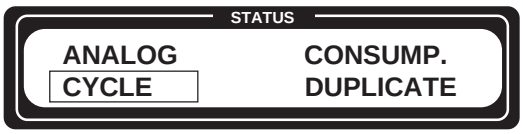
Printer

The printer records all cycle data on 2-1/4 inch (5.5 cm) wide, single-ply thermal paper. Printer is always located above control panel beside **POWER-OFF/STANDBY** switch (see Figure 3-2). Printer can be placed on either the soiled or the clean side on double door units.

» Printer Function Switch

The **PRINTER FUNCTION** switch (PRINT/PRINT VALUES) controls the following two printer functions:

- **PRINT** - Press top portion of the rocker switch to display print menu. Display shows:



☐ *indicates flashing position.*

Press **SELECT CYCLE** to select a function and **CYCLE/START** to generate the selected printout.

ANALOG - Generates a printout of the actual in-line heat exchanger water temperature, actual air temperature at the exhaust (Drying option), actual solution temperature in cooldown tank (Drain Discharge Cooldown Tank, Direct Drain Discharge Cooldown or pH Neutralizing options), actual water pressure and actual pH solution in the cooldown tank (pH Neutralizing option). See Figure 3-4.

CONSUMP - Generates a printout of the water and chemical consumption over a determined period of time. Report can be either in **gallons** or in **liters** (see Figure 3-5).

CYCLE - Generates a complete printout of all programmed cycles and treatment values (see Figure 3-6).

DUPLICATE - Generates a second printout of last cycle, with or without cycle validation according to the cycle configuration.

- **PRINT VALUES** - Press bottom portion of toggle switch to generate a complete cycle review printout including all treatments values of selected cycle (cycle flashing in Cycle Menu when PRINT VALUES was pressed). (See Figure 3-6).

  Figure 3-7 is an example of a typical cycle printout without cycle validation for Model 9500 washer. Figure 3-8 is an example of a printout with cycle validation.

» Typical Printouts

- **Power Up** - When **POWER/OFF-STANDBY** switch is set to **POWER**, the generated printout lists time and date the control was turned on, model and unit number (see Figure 3-9).

- **Cycle Start** - When **CYCLE/START** touch pad is pressed to begin selected cycle, the generated printout lists name of selected cycle, time and date cycle was started as well as cycle number and unit serial number.

- **Cycle Performance** - During a cycle, the generated printout indicates beginning and end of each treatment.

- **End-of-cycle Performance Summary** - At the end of a cycle, the generated printout lists time the cycle was completed, total cycle processing time and time the door was opened.

- **Alarm Printout** - When an alarm condition occurs, the generated printout lists the type of alarm and time it occurred. Once the operator presses **ALARM REPLY**, the generated printout lists the time the alarm was acknowledged (see Figure 3-10).

NOTE : Refer to Section 7 for listing of possible alarm conditions.

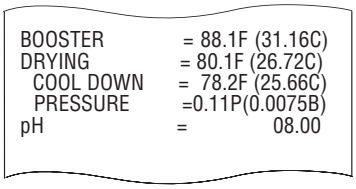


Figure 3-4. Typical Printout if ANALOG is Selected

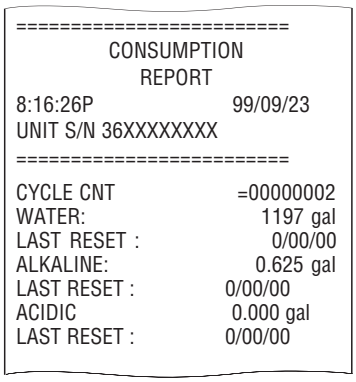


Figure 3-5. Typical Printout if CONSUMP is Selected

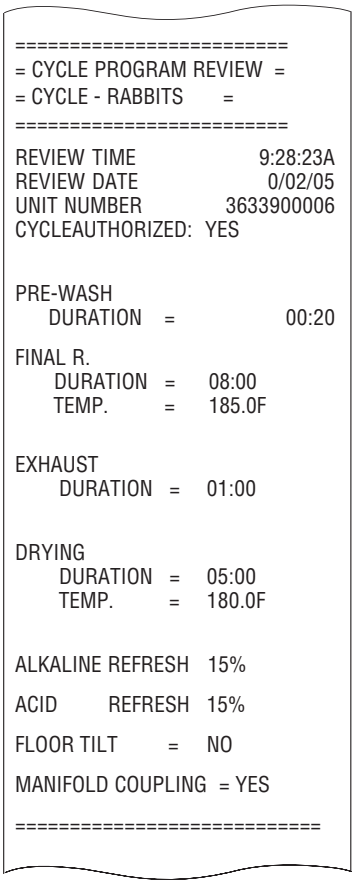


Figure 3-6. Typical Printout if CYCLE is Selected

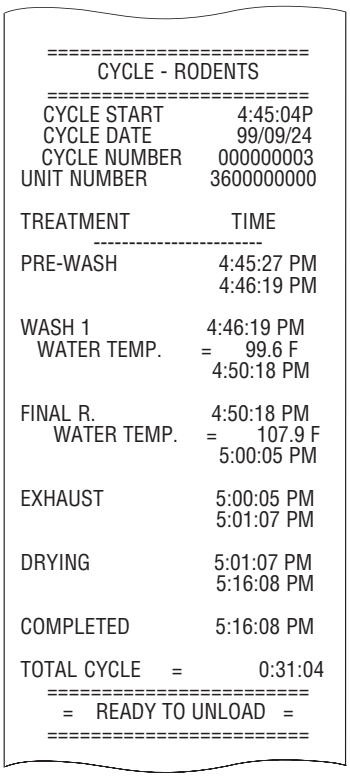


Figure 3-7. Typical cycle Printout, without Cycle Validation

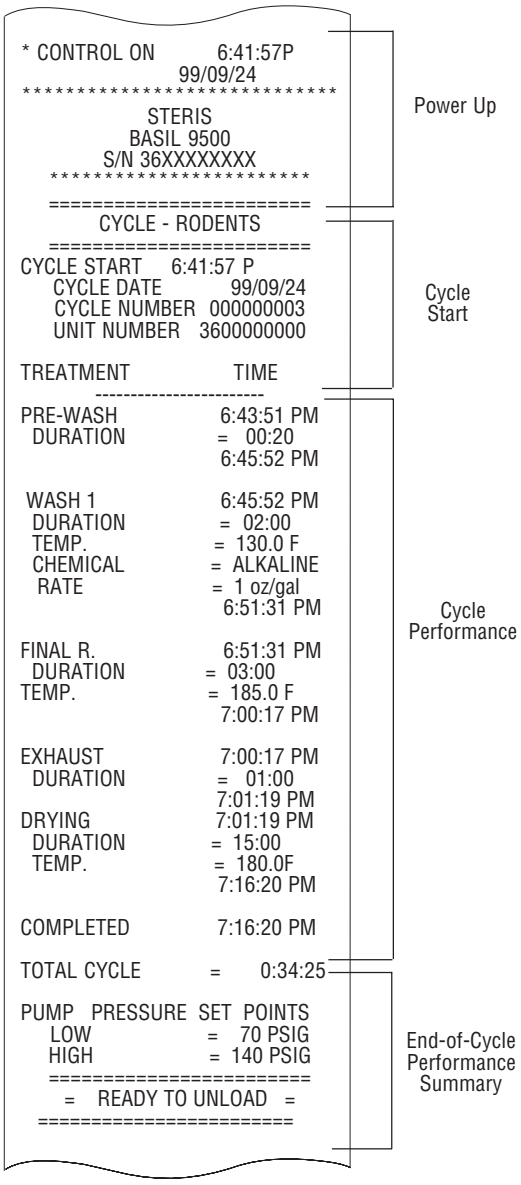


Figure 3-8. Typical Cycle Printout, with Cycle Validation

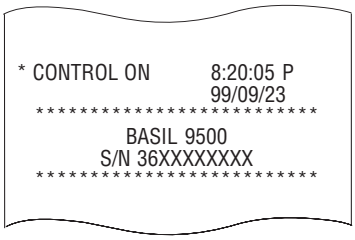


Figure 3-9. Typical POWER UP Printout

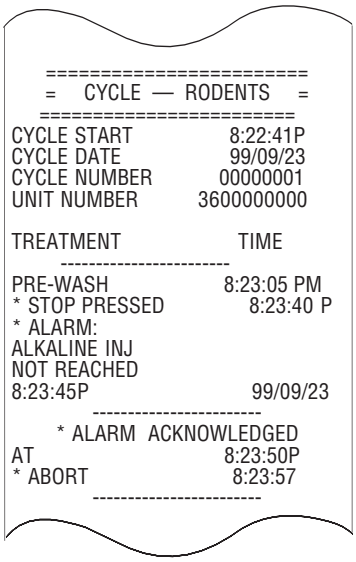


Figure 3-10. Typical Alarm Printout

Remote Control Panel (Double Door Units)

If washer is equipped with double doors for pass-through operation, an additional control panel is installed on the unload end of the washer (see Figure 3-11). The unload end control panel features the same touch pads and display screen as the main load end control panel (see Figure 3-3).

All washer functions except **POWER-OFF/STANDBY** and **PRINT/PRINT VALUES** can be directed from the unload end control panel, and the display screen concurrently shows the same message as displayed on the operating end control panel. There is no printer on the unload end control panel.

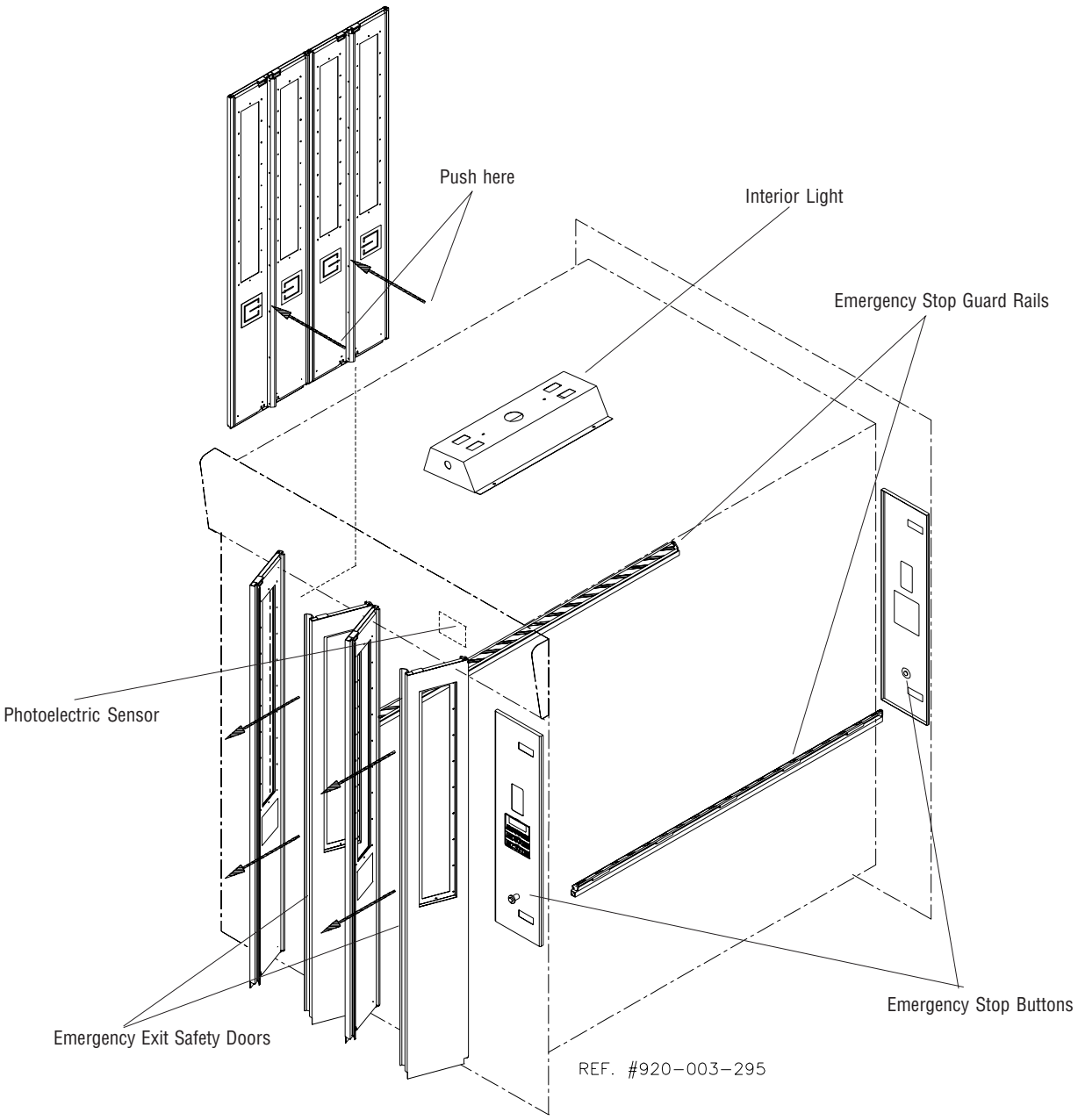


Figure 3-11. Emergency Safety Features

Emergency Safety Features

» Photoelectric Sensors

Photoelectric sensor(s), located under Upper Service Panel, are installed to detect obstructions when doors are closing. Doors will automatically depressurize and stop if any obstruction is detected by the photoelectric sensor(s).

» Emergency Exit Safety Doors

Door panels can be pushed out in case of an emergency, offering two emergency exit points on single door units and four on double door units (see Figure 3-11).

⚠ WARNING - PERSONAL INJURY HAZARD: To open doors from inside wash chamber, press Emergency Safety Guard Rails. Washer operation will automatically stop. Then, push firmly between door panels using shoulder and upper arm, applying upper body force. Do not push between the two doors, but between the door panels.

⚠ WARNING - PERSONAL INJURY OR EQUIPMENT DAMAGE HAZARD: To test or demonstrate Emergency Exit Safety doors, first press Emergency Stop Pushbutton (located under control) or Emergency Safety Guard Rails (inside wash chamber) to turn power OFF. If power is still on while adjusting or servicing doors, the Photoelectric Sensor will detect the movement of the door panels and doors will open automatically .

» Emergency Stop Guard Rails

Emergency Stop Guard Rails, located on each side of wash chamber, instantly stop washer operation when pressed (see Figure 3-11).

» Emergency Stop Pushbutton(s)

Emergency Stop Push-button(s) (one on single door units, two on double-door units) located under control panels, instantly stop washer operation when pressed (see Figure 3.11).

NOTE: Emergency Stop Push-button(s) will cut off electrical power to control only, and completely depressurize unit.

» Interior Light

Interior light flashes once prior to cycle start, warning the operator that a cycle is about to begin.

» Safety Delay

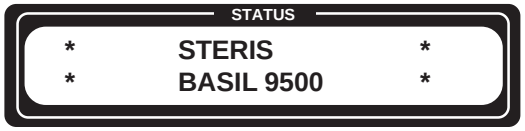
An adjustable Safety Delay (15 to 60 seconds), during which the washer will sound an alarm signal, has been provided to warn operator to leave the wash chamber before the cycle starts. Safety Delay is adjustable in Service Mode (see Section 4 in Maintenance Manual, P-764329-189). Default Safety Delay is 15 seconds.

Before Operating Washer

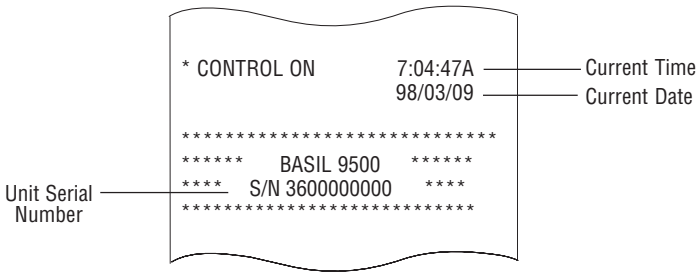
1. Verify that building electrical supply disconnect switch (circuit breaker) is positioned to ON. Verify that unit supply valves are open.
2. Verify that EMERGENCY STOP Pushbuttons are released and Emergency Stop Guard Rails are raised.
3. Verify that wash chamber is empty and that all material has been removed.
4. Verify that debris screen in bottom of sump is clean and properly installed.
5. Open printer door and check that sufficient amount of printer paper is available.

NOTE: A colored warning stripe is visible when paper roll is near the end. Refer to Section 6 if paper roll needs to be replaced.

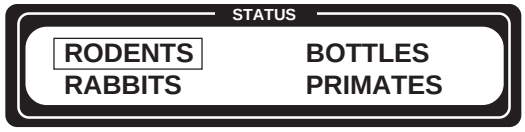
6. Turn POWER-OFF/STANDBY switch to POWER. Display shows:



and printer prints:



7. Side tanks fill with water (if not already full). Display screen automatically advances to the first Cycle Menu of factory-set cycles. Display shows:



☐ *indicates flashing position.*

Priming Procedure

WARNING - CHEMICAL BURN AND/OR EYE INJURY HAZARD: Always use non-foaming chemical for effective cleaning and proper pump and water level control operation. Follow manufacturer's recommendations for amount of chemical to be used.

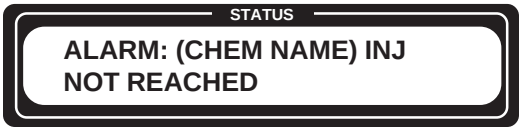
WARNING - CHEMICAL BURN AND/OR EYE INJURY HAZARD: Washer chemicals are caustic and can cause adverse effects to exposed tissues. Do not get in eyes, on skin or attempt to ingest by mouth.

• Read and follow the precautions and instructions on the detergent label and in the MSDS prior to handling the chemical, refilling chemical containers or servicing the chemical injection pumps and lines.

• Wear appropriate personal protective equipment (PPE) whenever handling chemicals or servicing chemical injection pumps and lines.

CAUTION : When choosing a chemical, select one with a low chloride content. Chloride is harmful to stainless steel and will deteriorate washer.

The system is self-priming and requires no specific operation. Flowmeter(s) will detect when no detergent is being injected. An alarm buzzer will sound and display will show:



To achieve maximum cleaning efficiency, select chemical appropriate to soil type being processed. Refer to Chemical Additives Specifications in Section 2.

Doors

CAUTION: Keep away from doors to prevent load detection sensor from stopping doors from closing.

Inward sliding doors provide access to the wash chamber. Door movement is power controlled. When a load is placed in front of the doors, a photoelectric sensor will detect the load and doors will automatically open when washer is ready.

NOTE: The Photoelectric Sensor may be disabled in Service Mode. Refer to Section 4 of Maintenance Manual (P-764 329-189).

» Door Operation

Power doors are controlled by touch pads located on the control panel (see Figure 3-3).

Press **DOOR OPEN** to automatically open doors or place load under photoelectric sensor beam. Load must remain under photoelectric sensor beam for at least 3 seconds before doors will open.

Press **DOOR CLOSE** to automatically close doors. Doors will not close if any obstruction is detected in front of washer or in doorway.

Press **STOP/RESET** to interrupt opening or closing of doors.

IMPORTANT: Keep chamber doors closed between cycles and when washer is not in use.

WARNING - PERSONAL INJURY HAZARD: When doors are closing a pinch point is created at the hinges. Keep fingers away from door hinges in order to prevent pinching.

WARNING - PERSONAL INJURY HAZARD: To open doors from inside wash chamber, press Emergency Safety Guard Rails. Washer operation will automatically stop. Then, push firmly between door panels using shoulder and upper arm, applying upper body force. Do not push between the two doors but between the door panels.

WARNING - PERSONAL INJURY HAZARD AND/OR EQUIPMENT DAMAGE HAZARD: To test or demonstrate Emergency Exit Safety Doors, first press Emergency Stop Pushbutton (located under control) or Emergency Safety Guard Rails (inside wash chamber) to turn power OFF. If power is still ON while adjusting or servicing doors, the Photoelectric Sensor will detect the movement of the door panels and doors will open automatically.

» Double Door Units with Interlock Feature

WARNING - PERSONAL INJURY HAZARD: Keep hands/fingers away from closing doors in order to prevent crushing between the two doors.

WARNING - BURN HAZARD: Except for emergency, do not open doors when cycle is in progress. In an emergency, first stop cycle by pressing the EMERGENCY STOP PUSHBUTTON and wait for water flow to stop. Wear approved personal protective equipment (PPE) whenever reaching into or entering chamber.

If unit is equipped with double doors, a door Interlock feature prevents cross contamination by allowing only one door to be opened at a time. Doors can be opened one at a time, when green light is on.

Load end control will energize load end doors only. Unload end control will energize unload end doors only.

NOTE: It is possible to bypass the interlock system in Service Mode (see Section 4 of Maintenance Manual P-764329-189), if opening of both doors at the same time is more practical for operator.

*NOTE: If operator chooses to de-activate interlock feature, pressing **DOOR CLOSE** or **DOOR OPEN** touch pads on either side of washer will automatically open or close both doors.*

» Opening Doors during a Power Failure

WARNING - PERSONAL INJURY HAZARD: If doors are still slightly open (less than 2 inches [5 cm]) when power is restored after a power failure, control will apply pressure to complete closing. Lock building electrical supply disconnect switch in OFF position and close unit air supply when opening doors after a power failure.

1. Lock building electrical supply disconnect switch on OFF position and close unit air supply valve before opening doors manually. If not, when the power returns, doors could close automatically.
2. Wearing gloves, slide fingers between doors and slowly push the doors apart.

NOTE: If operator is inside wash chamber during a power failure, it is possible to exit through the Emergency Exit Safety Doors or by opening the doors manually.

Accessories

CAUTION: Remove all cellulose type bedding from cages and pans before processing. Cellulose bedding may clog filters and piping.

In order to properly clean items and to avoid personal injuries, always follow these general loading guidelines:

1. Make sure that no items stick out or hang out of the rack. Always use a rack designed to handle the appropriate type of items to be processed.
2. Use specific accessories designed to handle cages, bottles, pans, floor grids and cage doors:

IMPORTANT: Remove as much debris as possible from cages and pans before loading accessories

- **Bottle Washing Cart** - Used for processing up to six bottle baskets. Requires Manifolded Coupling System (option).
- **Pan Cart** - Used to wash pans, floor gratings, cage doors, etc.

  Central Spray Header Manifold - Used to clean and sanitize up to 200 standard mouse cages per load. Requires Manifold Coupling System (option).

  Rodent Cage Rack - Used to hold up to 92 mouse cages or 32 rat cages, or shoe boxes, covers and feeder tops.

CAUTION: Always leave plenty of space between load and doors. Leaning load against doors will damage doors and also prevent them from opening or closing.

3. Use baskets for handling and cleaning various size bottles. The lightweight basket design provides easy handling and simplifies transport and washing of bottles.

   5 x 5 Bottle Basket, 16 oz (454 ml) bottles - Used to wash 25 bottles (16 oz [454 ml]).

   4 x 6 Bottle Basket, 16 oz (454 ml) bottles - Used to wash 24 bottles (16 oz [454 ml]).

   5 x 5 Bottle Basket, 8 oz (236 ml) bottles - Used to wash 25 short 4" (10 cm) bottles.

   4 x 6 Bottle Basket, 8 oz (236 ml) bottles - Used to wash 24 tall 5-1/2" (14 cm) bottles.

» How to Load Accessories Into Wash Chamber

1. Make sure all items to be treated are correctly positioned on accessory.
2. Place loaded accessory cart in front of unit, under photoelectric sensor beam. Load must not touch doors, inside or outside wash chamber.

NOTE: Photoelectric sensor located above doors, under upper front access panel, must be able to detect cart. Make sure cart is positioned under photoelectric sensor beam.

3. Wait for chamber doors to open and push loaded accessory cart into wash chamber.

4. If photoelectric sensor is disabled, press **DOOR OPEN** to open door and push cart into wash chamber. It is possible to disable photoelectric sensor in Service Mode (see Section 4 in Maintenance Manual P-764329-189).

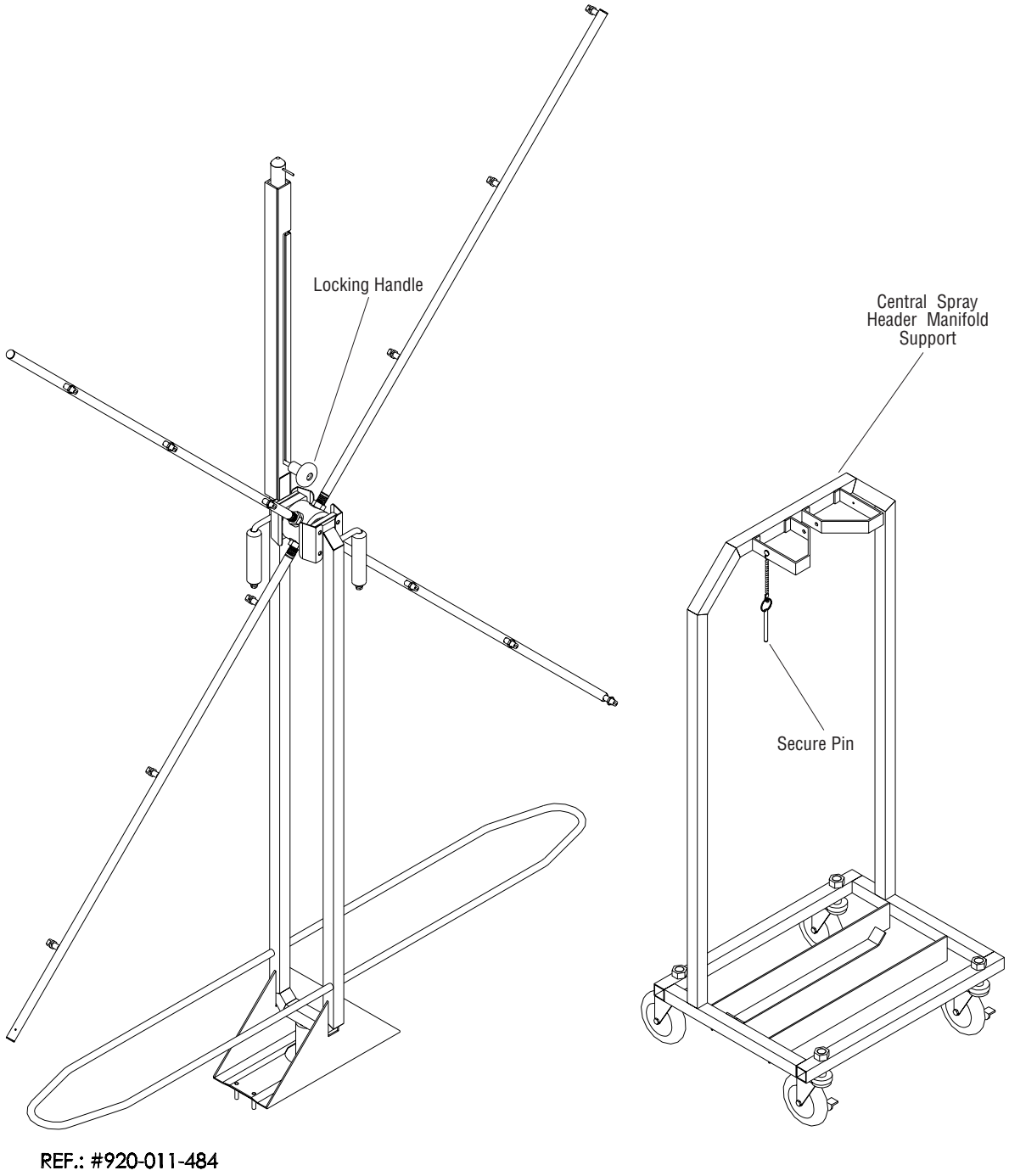


Figure 4-1. Central Spray Header Manifold

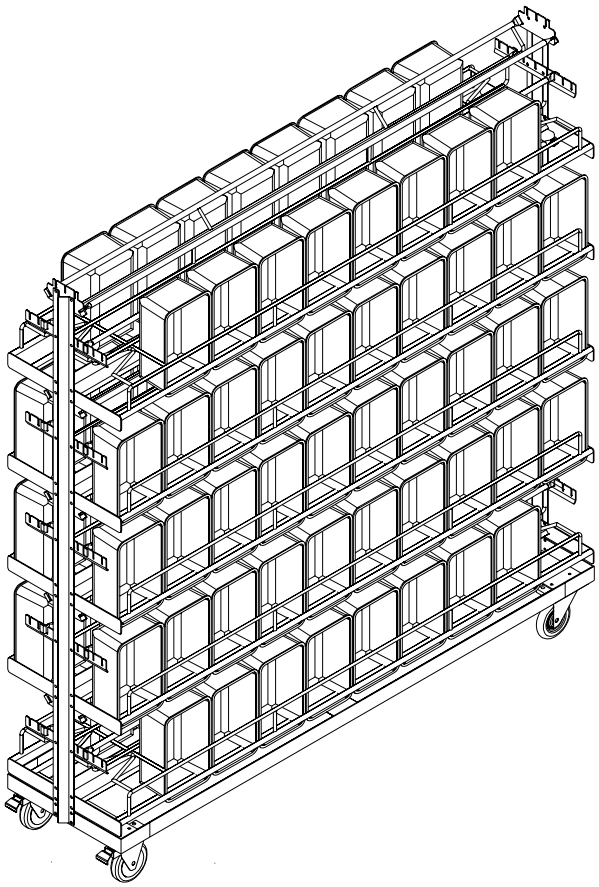
» How to Load Central Spray Header Manifold with Rodent Cage Racks (Option)

DOOR OPEN

1. Press **DOOR OPEN** to open doors.
2. Enter wash chamber and roll Central Spray Header Manifold (see Figure 4-1) along central rails until top of header is aligned with roof locking support.

CAUTION - EQUIPMENT DAMAGE HAZARD: Always position Central Spray Header Manifold over central water inlet connector before operating unit. If Spray Header is not positioned correctly, damage may result and unit will be unable to effectively wash load.

4. Unlock secure pin retaining Central Spray Header to support.
5. Align header on bottom of accessory with water inlet connector at bottom of the wash chamber.
6. Push up locking handle towards roof locking support and turn clockwise to secure header into position.
7. Roll Central Header Support out from wash chamber.
8. Roll Rodent Cage Racks (see Figure 4-2) along Central Spray Header Manifold inside wash chamber.



REF.: #920-011-961

Figure 4-2. Rodent Cage Rack

» How to Load Bottle Washing Cart (Option)

DOOR OPEN

1. Press **DOOR OPEN** to open doors.
2. Enter wash chamber.
3. Roll Bottle Washing Cart (see Figure 4-3) or Universal Cage and Pan Wash Cart (see Figure 4-4) along guiding rails until wheels are positioned between stoppers on rails.
4. Make sure water inlet connector at bottom of wash chamber is aligned with manifold on bottle washing cart.

CAUTION - EQUIPMENT DAMAGE HAZARD: Always position Bottle Washing Cart over central water inlet connector before operating unit. If Bottle Washing Cart is not positioned correctly, damage may result and unit will be unable to effectively wash load.

Figure 4-3. Bottle Washing Cart

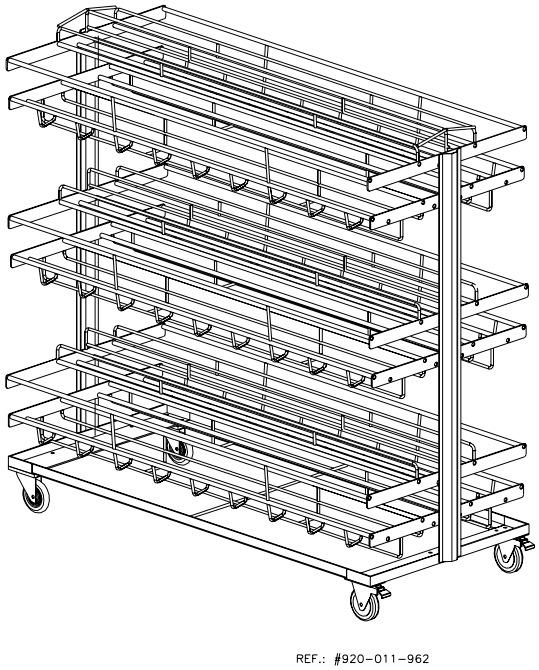


Figure 4-4. Universal Cage and Pan Wash Cart

Typical Cycle Operation

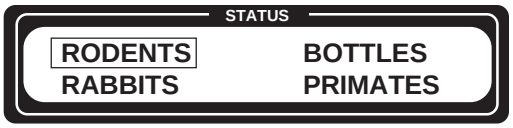
The Basil 9500 Cage and Rack Washer is pre-programmed with four processing cycles, and is capable of retaining up to six additional cycles. Each cycle can be customized to include up to seven different treatments. For instructions on programming, refer to Section 5, Cycle and Control Value Programming.

» To begin cycle operation

DOOR CLOSE

1. Once washer is properly loaded, press **DOOR CLOSE** to close doors. The first Factory-set Cycle Menu appears on the screen. Display shows:

⚠ WARNING - FALL HAZARD: To prevent falls, keep floor dry. Promptly clean up any spills or drippage.



☐ *indicates flashing position*

CYCLE MENU

*NOTE: The following cycle description is based on the pre-programmed **PRIMATES** cycle. Refer to Table 4-1 for default treatment values of the **PRIMATES** cycle. If you wish to access one of the other two cycle menus, press **CYCLE MENU.***

SELECT CYCLE

2. Press **SELECT CYCLE** to select a cycle from the displayed menu.

CYCLE START

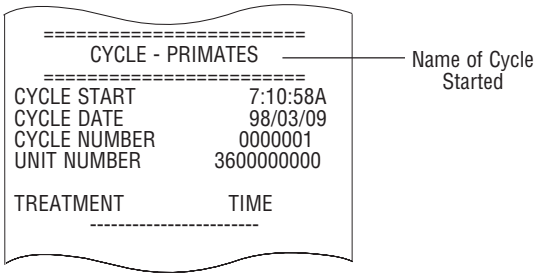
3. When desired cycle is selected (cycle name is flashing on display screen), press **CYCLE/START**. The name of the selected cycle appears on the screen and remains displayed during the 15-second safety delay. Display shows:

Treatment Name	Time (min:sec)	Water/Air Temp.
Pre-wash	00:20	N/A
Wash 1	06:00	130°F/54°C
Rinse	00:00	N/A
Wash 2*	06:00	160°F/71°C
Rinse	00:00	N/A
Final Rinse	02:00	185°F/71°C
Exhaust	01:00	N/A
Drying*	10:00	180°F/82°C

*Option

Table 4-1. Default Treatments and Settings for PRIMATES Cycle

4. Once cycle is started, printer records:



5. After the 15-second safety delay (adjustable in Service Mode, refer to Section 4 in Maintenance Manual P-764329-189), washer automatically progresses through the following programmed treatments.

STOP RESET CYCLE START

*NOTE: Washer operation can be interrupted at any time by pressing **STOP/RESET**. To resume cycle, press **CYCLE/START**. To abort cycle, press **STOP/RESET** a second time.*

NOTE: After washer operation has been interrupted, a 60-second delay will prevent doors from opening before it is safe to do so. Operator must wait until the end of the delay before opening doors.

NOTE: If unit fails or if any abnormal condition occurs during a cycle, refer to Section 7 to identify the possible cause and corrective action.

CAUTION: Avoid product damage. Always select a cycle appropriate for the items being processed.

- **PRE-WASH:** Solution from Tank 2 is sprayed over load for 20 seconds (factory set) and sent directly to drain (or to Drain Discharge Cooldown Tank if option is present). Pre-wash is non-recirculated.
- **WASH 1:** Load is washed with 130°F (54°C) heated solution from Tank 1 for 6 minutes (factory set).
- **RINSE:** Water from Tank 2 is sprayed over load and sent directly to drain (or to Drain Discharge Cooldown Tank if option is present). Rinse is non-recirculated.
- **WASH 2 (Option):** Load is washed with 160°F (71°C) heated solution from Tank 3 (factory set) for 6 minutes (factory set).
- **RINSE:** Water from Tank 2 is sprayed over load and sent directly to drain (or to Drain Discharge Cooldown Tank if option is present). Rinse is non-recirculated.

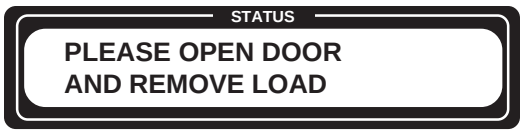
NOTE: Not available in PRIMATES Cycle (factory set).

- **FINAL RINSE:** Load is rinsed with 185°F (85°C) heated water from Tank 2 for 2 minutes (factory set).

NOTE: RINSE phase timer will be started only when 185°F (85°C) is reached.

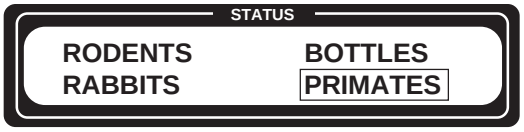
- **VAPOR EXHAUST:** Residual vapor is removed from chamber for 1 minute (factory set).
- **DRYING (Option):** Load is dried at 180°F (82°C) (factory set) for 10 minutes (factory set). Drying is non-recirculated.

6. When cycle is completed, buzzer sounds and display shows:



WARNING - BURN HAZARD: Inner surfaces of washer are very hot after cycle completion. Operator should wear appropriate personal protective equipment (PPE) and avoid all contact with inner walls when entering chamber.

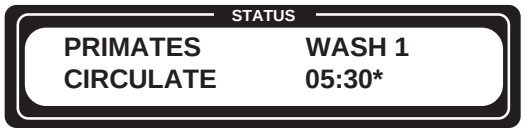
7. Open chamber door by pressing on **DOOR OPEN** or by simply stepping in front of doors. Leave doors open and allow load to cool before removing accessory headers. Display screen returns to cycle menu. Display shows:



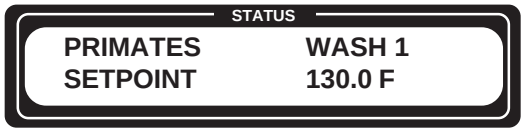
☐ *indicates flashing position.*

IMPORTANT: When cycle is completed, unload door must be opened and then closed before another cycle may be started.

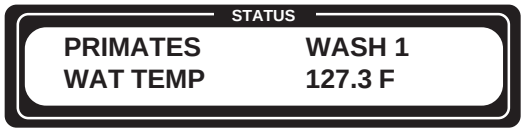
8. The following is an example of the sequence of displays that appears on the screen while a cycle is in progress:



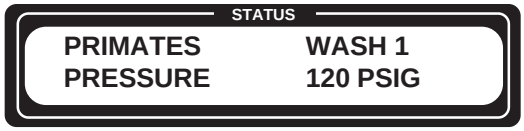
...alternating with...



... alternating with...



... alternating with...



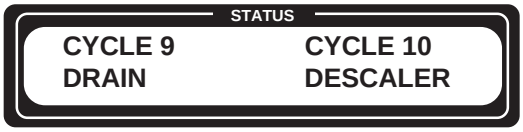
** During Final Rinse treatment, countdown will start only when temperature set point is reached.*

Drain Cycle

Drain cycle can be performed whenever necessary: after each cycle, between different load types, or at the end of a work session.

CYCLE MENU

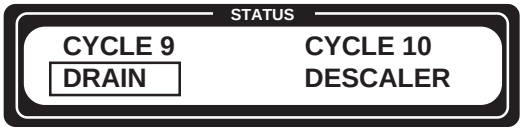
1. Press **CYCLE MENU** to scroll to appropriate cycle menu. Display shows:



⚠ WARNING - FALL HAZARD: To prevent falls, keep floor dry. Promptly clean up any spills or drippage.

SELECT CYCLE

2. Press **SELECT CYCLE** to select DRAIN Cycle. Display shows:



CYCLE START

3. Press **CYCLE/START**. Display shows:

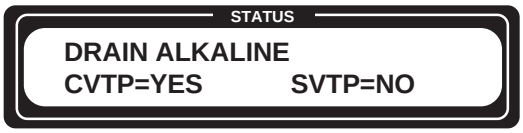
NOTE: Purging travelers will also purge Rinse Tank (Tank 2).

CHANGE VALUES SAVE VALUES

4. Press **CHANGE VALUES** to purge travelers or press **SAVE VALUES** to skip to the next question. Display shows:

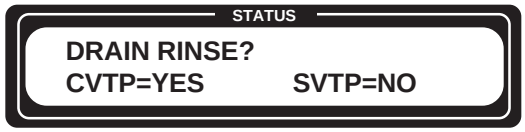
CHANGE VALUES SAVE VALUES

5. Press **CHANGE VALUES** to select **YES** and drain all tanks. Press **SAVE VALUES** to select **NO** and choose which tanks to drain. If **YES** has been selected, control will automatically move to step 9. Display shows:



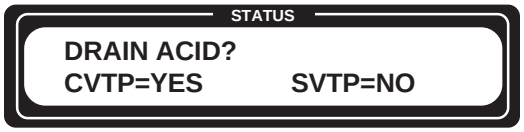
CHANGE VALUES SAVE VALUES

6. Press **CHANGE VALUES** to drain Alkaline Tank (Tank 1), or press **SAVE VALUES** to keep tank filled. Display shows:



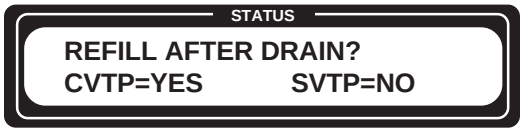
*NOTE: The display is only shown if NO has been selected in answer to **PURGE TRAVELERS?***

7. Press **CHANGE VALUES** to drain Rinse Tank (Tank 2), or press **SAVE VALUES** to keep tank filled. Display shows:



NOTE: The display appears only if Second Wash Tank option is present.

8. Press **CHANGE VALUES** to drain Acid Tank (Tank 3), or press **SAVE VALUES** to keep tank filled. Display shows:



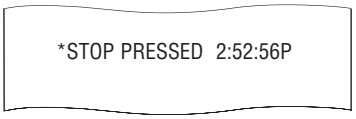
9. Press **CHANGE VALUES** to refill selected tanks after draining is completed, or press **SAVE VALUES** to leave selected tanks empty after draining is completed. Washer will start draining selected tanks.

IMPORTANT: At the end of a work session, the washer should be completely drained.

Pause Cycle Operation

1. Press **STOP/RESET** once to interrupt cycle operation. Pressing **STOP/RESET** once will interrupt cycle and will remove remaining water and vapor from wash chamber. Display shows:

and printer records:

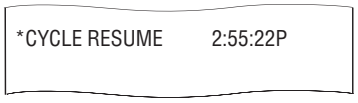


IMPORTANT: Unit has a built-in 60-second (approximately) delay to prevent doors from opening before it is safe to do so. Operator must wait until the end of the delay before opening doors. Display shows:

alternating with . . .

WARNING - BURN HAZARD: **Except for emergency, do not open doors when cycle is in progress. In an emergency, first stop cycle by pressing the STOP/RESET touch pad and wait for water flow to stop. Wear appropriate personal protective equipment (PPE) whenever reaching into or entering chamber.**

2. Press **CYCLE/START** to resume cycle operation or STOP/RESET to abort cycle. Treatment resumes where it was interrupted. Printer records:



WARNING - BURN HAZARD: **Inner surfaces of washer are very hot after cycle completion. Operator should wear appropriate personal protective equipment (PPE) and avoid all contact with inner walls when entering chamber.**

Abort Cycle Operation

STOP RESET

WARNING - BURN HAZARD: Except for emergency, do not open doors when cycle is in progress. In an emergency, first stop cycle by pressing the EMERGENCY STOP PUSHBUTTON and wait for water flow to stop. Wear appropriate personal protective equipment (PPE) whenever reaching into or entering chamber.

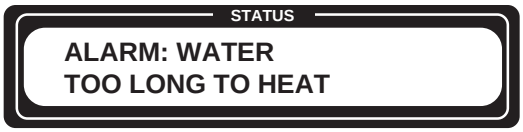
1. Press **STOP/RESET** twice to abort cycle in progress. Display shows:

..and printer records:

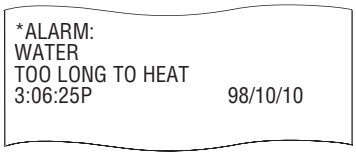
IMPORTANT: Unit has a built-in 60-second (approximate) delay to prevent doors from opening before it is safe to do so. Operator must wait until the end of the delay before opening doors.

Acknowledge Alarm Condition

1. If an alarm condition occurs during cycle operation, an alarm buzzer sounds to notify operator. An alarm message will appear on the display screen. Display shows:

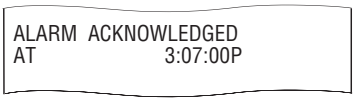


and the printer lists the type of alarm and time it occurred.



ALARM REPLY

2. Press **ALARM REPLY** to silence alarm buzzer and acknowledge the displayed alarm message. Printer records time the alarm was acknowledged. Printer records:



3. Unit will perform an Exhaust Vapor Removal phase during one minute. Display shows :

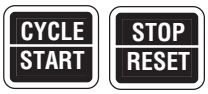
STATUS
VAPOR EXHAUST
PLEASE WAIT

then:

STATUS
CYCLE IS PAUSED
START TO CONTINUE OR

alternating with...

STATUS
CYCLE IS PAUSED
PRESS STOP TO ABORT



4. Press **CYCLE/START** to resume cycle operation or **STOP/RESET** to abort cycle.

Refer to Section 7, Troubleshooting, for a list of alarm conditions and their possible solution.

Shutdown

There are two different ways of performing the Shutdown Cycle: manual or automatic.

» Manual Shutdown

1. Position **POWER-OFF/STANDBY** switch to **OFF/STANDBY**.
2. After a one-minute delay, Shutdown Cycle starts. A drain phase is performed on tanks 1, 2 and 3 (option). If Drain Discharge Cooldown Tank option is present, drain phase will take longer. There is a one-minute delay before draining starts. Display shows:

STATUS
SHUTDOWN IN 00:59
POWER ON TO ABORT

*NOTE: During the one-minute delay before Shutdown Cycle starts, operator may return washer to the Ready Mode by positioning **POWER-OFF/STANDBY** switch to **POWER**.*

3. When safety delay time has elapsed, shutdown will start. All tanks will start draining. Display shows:

STATUS
SHUTDOWN IN PROGRESS
PLEASE STANDBY: 15:00

and printer prints:

```
==========================
         SHUTDOWN

7:25:23A          97/10/31
UNIT S/N 36XXXXXXXX
==========================
DRAINING:         HH:MM:SS
```

4. When draining is completed, display shows:

and printer prints:

```
==========================
      * CONTROL OFF

7:25:23A          97/10/31
UNIT S/N 36XXXXXXXX
==========================
                  HH:MM:SS
                  YY/MM/DD
```

» Automatic Shutdown

Automatic Shutdown may be programmed to start automatically at a given time (default 17:30) to suit customer needs (adjustable in Service Mode, contact your service Representative, or have a qualified service technician refer to Section 4 in Maintenance Manual P-764329-189).

1. If a cycle is in progress, Automatic Shutdown will be performed once cycle has been completed.
2. Before Automatic Shutdown starts, there is a one-minute countdown during which Automatic Shutdown may be bypassed.

*NOTE: To bypass automatic Shutdown, position **POWER-OFF/STANDBY** Switch to **OFF/STANDBY** then to **POWER**.*

NOTE: To disable Automatic Shutdown, set shutdown time to 24:00 in Automatic Mode.

CYCLE AND CONTROL VALUE PROGRAMMING 5

The microcomputer control of the Basil® 9500 Cage and Rack Washer allows the adjustment of programmed cycles and the creation of new cycles. Using this feature, cycles may be customized to process different types of loads.

The washer is preprogrammed with four basic cycles: RODENTS, BOTTLES, RABBITS and PRIMATES. These cycles are programmed with treatments and treatment values to which the control will default in the case of battery or memory failure.

The control is also capable of storing parameters for up to six custom cycles. In addition to these ten programmable cycles, there are two cycles that cannot be modified: DRAIN and DESCALER, which are used for maintenance purposes.

The following chart summarizes the unit default values and parameters for customized cycles.

See Table 5-1 for the cycle default values and treatment parameters.

Table 5-1. Basil 9500 Cage and Rack Washer Cycle Description

ADJUSTABLE CYCLE PARAMETERS

	PRE-WASH	WASH 1	MID-RINSE	WASH 2 (OPTIONAL)	RINSE	FINAL RINSE	VAPOR EXHAUST	DRY (OPTIONAL)	FLOOR TILTING	MANIFOLD COUPLING
SELECTIONS	*NON-RECIRCULATED*	*RECIRCULATED*	*NON-RECIRCULATED*	*RECIRCULATED*	*NON-RECIRCULATED*	*RECIRCULATED*		*NON-RECIRCULATED*	***YES OR NO***	***YES OR NO***
SELECTABLE TANKS	*RINSE*	*ALKALINE OR ACID*	*RINSE*	*ACID OR ALKALINE*	*RINSE*	*RINSE*				
INJECTION RANGE		*0 OZ/GAL- 4 OZ/GAL (0 ML/L - 32 ML/L)*		*0 OZ/GAL- 4 OZ/GAL (0 ML/L - 32 ML/L)*						
DURATION RANGE	*00:20*	*00:00 - 10:00*	*00:20*	*00:00 - 10:00*	*00:20*	*00:00 - 08:00*	*01:00 - 05:00*	*00:00 - 15:00*		
LOAD TEMPERATURE RANGE		*120°F - 165°F (49°C - 74°C)*		*120°F - 165°F (49°C - 74C)*		*¤ 160°F-185°F (71°C - 85°C)*		*140°F - 180°F (60°C - 82°C)*		
TANKS REFRESH RATE		*15 % TO 100 %*		*15 % TO 100 %*						

PRE-PROGRAMMED CYCLES FACTORY SETTINGS

		PRE-WASH	WASH 1	MID-RINSE	WASH 2	RINSE	FINAL RINSE	VAPOR EXHAUST	DRY	FLOOR TILTING	MANIFOLD COUPLING
RODENTS	***SELECTED TANK***	*RINSE*	*ALKALINE*	*RINSE*	*IF SELECTED*	*RINSE*	*RINSE*				
	INJECTION RATE		*1 OZ/GAL (8 ML/L)*		*IF SELECTED*						
	DURATION	*00:20*	*02:00*	*IF SELECTED*	*IF SELECTED*	*IF SELECTED*	*03:00*	*01:00*	*15:00*	***NO***	***NO***
	TEMPERATURE		*130°F (54°C)*		*IF SELECTED*		*185°F (85°C)*		*180°F (82°C)*		
	TANK REFRESH RATE		*15%*		*IF SELECTED*						
BOTTLES	***SELECTED TANK***	*RINSE*	*ALKALINE*	*RINSE*	*IF SELECTED*	*RINSE*	*RINSE*				
	INJECTION RATE		*1 OZ/GAL (8 ML/L)*		*IF SELECTED*						
	DURATION	*00:20*	*02:00*	*IF SELECTED*	*IF SELECTED*	*IF SELECTED*	*03:00*	*01:00*	*15:00*	***NO***	***YES***
	TEMPERATURE		*130°F (54°C)*		*IF SELECTED*		*185°F (85°C)*		*180°F (82°C)*		
	TANK REFRESH RATE		*15%*		*IF SELECTED*						
RABBITS	***SELECTED TANK***	*RINSE*	*ALKALINE*	*RINSE*	*ACID*	*RINSE*	*RINSE*				
	INJECTION RATE		*1 OZ/GAL (8 ML/L)*		*2 OZ/GAL (16 ML/L)*						
	DURATION	*00:20*	*02:00*	*IF SELECTED*	*08:00*	*IF SELECTED*	*02:00*	*01:00*	*10:00*	***YES***	***NO***
	TEMPERATURE		*130°F (54°C)*		*160°F (71°C)*		*185°F (85°C)*		*180°F (82°C)*		
	TANK REFRESH RATE		*15%*		*15%*						
PRIMATES	***SELECTED TANK***	*RINSE*	*ALKALINE*	*RINSE*	*ACID*	*RINSE*	*RINSE*				
	INJECTION RATE		*1 OZ/GAL (8 ML/L)*		*2 OZ/GAL (16 ML/L)*						
	DURATION	*00:20*	*06:00*	*IF SELECTED*	*06:00*	*IF SELECTED*	*02:00*	*01:00*	*10:00*	***YES***	***NO***
	TEMPERATURE		*130°F (54°C)*		*160°F (71°C)*		*185°F (85°C)*		*180°F (82°C)*		
	TANK REFRESH RATE		*15%*		*15%*						
CYCLE 5 TO CYCLE 10	***SELECTED TANK***	*RINSE*	*IF SELECTED*	*RINSE*	*IF SELECTED*	*RINSE*	*RINSE*				
	INJECTION RATE		*IF SELECTED*		*IF SELECTED*						
	DURATION	*00:20*	*IF SELECTED*	*IF SELECTED*	*IF SELECTED*	*IF SELECTED*	*IF SELECTED*	*01:00*	*IF SELECTED*	***NO***	***NO***
	TEMPERATURE		*IF SELECTED*		*IF SELECTED*		*IF SELECTED*		*IF SELECTED*		
	TANK REFRESH RATE		*15%*		*IF SELECTED*						

	PHASES	DETAILS	
		MANUAL	**AUTOMATIC**
DESCALER	1 - DRAIN TANKS 1 & 2 (3 optional) & PIPING		
	2 - FILL TANKS 1 & 2 (3 optional)		
	3 - FILL THE SUMP WITH TANK 1, 2 or (3 optional)	CONTROL INDICATES OPERATOR TO ADD DESCALER IN THE CHAMBER FOR EACH TANK	DESCALER INJECTION
	4 - RECIRCULATE EACH TANK	5 MINUTES EACH TANK , 180°F MAINTAINED, NOT GUARANTEED	5 MINUTES EACH TANK , 180°F MAINTAINED, NOT GUARANTEED
	5 - DRAIN ALL TANKS	3 MINUTES EACH TANK, 120°F	
	6 - FILL TANKS 1 & 2 (3 optional)		
	7 - RECIRCULATE EACH TANK	5 MINUTES EACH TANK , 180°F MAINTAINED, NON GUARANTEED	
	8 - VAPOR EXHAUST	1 MINUTE EACH TANK	1 MINUTE

DESCALER cycle can not be altered.

DRAIN	This cycle enables draining of TANK 1, 2 & 3 (Optional), Purge Spray Headers

Final Rinse temperature can be modified in Service Mode only. Modifying Final Rinse temperature can impact on the efficiency of the treatment. STERIS does not recommend performing a Thermal Rinse at a temperature below 185°F (85°C).

Change Values Mode

The Change Values Mode allows authorized operators to modify treatment values of existing cycles or modify miscellaneous operating values.

All the values can be secured (or "locked-out") using a supervisor Access Code.

» Sequence of Display Screens

In Change Values Mode, cycles are modified or created by selecting a treatment, then by modifying its values. The process is repeated for each selected treatment until a customized cycle is completed.

Treatment values appear on the display screen in a sequential order which is the same for all pre-programmed or custom cycles.

Treatments may be bypassed by setting time values to 0 except for **PRE-WASH** and **EXHAUST**.

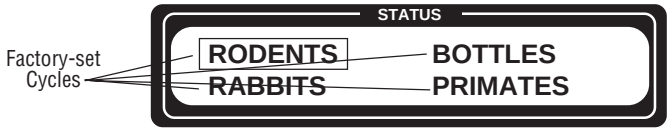
NOTE: In the following sequence, tank and chemical names used are default factory-set names. Tank and chemical names may be changed in Service Mode to meet customer needs (refer to Section 4 in Maintenance Manual P-764329-189).

» How to Modify a Cycle

The following procedure shows how to modify a cycle.

1. Position **POWER/OFF-STANDBY** switch, located behind printer door, to **POWER**. Unit name temporarily appears on the screen. Display shows:

Then, the first Cycle Menu appears. Display shows:



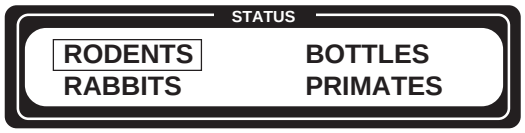
☐ *indicates flashing position.*

CYCLE MENU

*NOTE: To scroll through available cycle menus, press **CYCLE MENU**.*

SELECT CYCLE

2. Press **SELECT CYCLE** until desired cycle name flashes. Display shows:



☐ *indicates flashing position.*

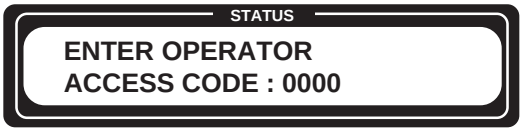
3. If **ACCESS CODE** feature is enabled, operator must enter Access Code before entering Change Values Mode.

4. The **Access Code** feature is used to prevent unauthorized changes to the parameters of designated cycles and/or operating values by unauthorized operators. With this feature, access to cycle values may be selectively limited to authorized operators only, depending on the security needs of the washer environment. When Access Code is enabled, only authorized operators can change operating values.

   ADVANTAGES OF ENABLING OR DISABLING ACCESS CODE: Enabling or disabling the Access Code can impact the efficiency of washing operations. For that reason, the supervisor should carefully consider the choices: if the Access Code is **ON**, the supervisor can ensure operators use the washer within predetermined parameters; if the Access Code is **OFF**, the supervisor can allow operators more flexibility in determining which cycles to use and how to use them. The deciding factor should be what works best for the facility's operation.

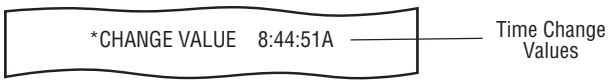
NOTE: The ACCESS CODE feature can be enabled in Service Mode only (refer to Section 4 in Maintenance Manual P-764329-189),

5. Press **CHANGE VALUES** to confirm cycle selection. If Access Code feature has been enabled, display shows:

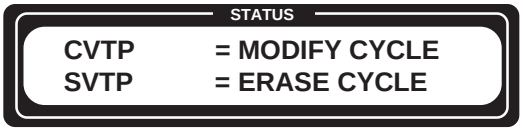


6. To enter correct Access Code, press **VALUE** (up or down) to select position and **CURSOR** (left or right) to select desired number (0-9). The Access Code is input as a four-digit number from 0001 to 9999.

7. Once proper Access Code is entered, press **CHANGE VALUES** to access the Change Values Mode. The printer records:



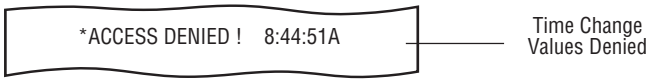
   and the first Change Values Mode display screen appears:



NOTE: If SAVE VALUES touch pad is pressed, display will show Date and Time. To modify Date and/or Time, see points 56 and 57.

NOTE: If wrong Access Code is entered, display shows:

and printer records:

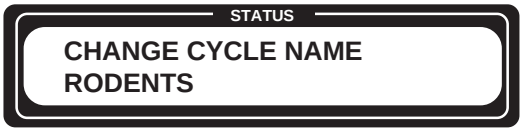


NOTE: If access is denied, display defaults to main cycle menu.

8. Press **CHANGE VALUES** to modify cycle values

   or....

9. Press **SAVE VALUES** to reset selected cycle values to the factory-set values. Cycle will revert to its original default pre-programmed values. Displays shows:



*NOTE: Operator may exit Change Values Mode at any time by pressing **SAVE VALUES**. Control will save confirmed values and return to selected cycle menu.*

10. Enter new cycle name (9 characters or less), using **CURSOR** (left or right) to move from one position to the next, and **VALUE** (up or down) to scroll letters, numbers, underscore, spaces (represented by a square) and various other symbols.

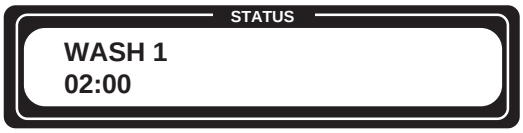
11. To scroll rapidly through letters, numbers, etc., press and hold **VALUE** (up or down). When display shows selected value, move cursor to next position.

12. Press **CHANGE VALUES** to confirm name and continue sequence. Display shows:

*NOTE: At this point, supervisor or operator may decide to lock out a cycle. If **YES** is selected, all operators will be able to start the cycle. If **NO** is selected, cycle will be locked out and cannot be started.*

13. Press **VALUE** (up or down) to change **YES** to **NO**. Press **CHANGE VALUES** to confirm selection.

14. The **PRE-WASH** display screen does not appear because **PRE-WASH** values are not adjustable and cannot be bypassed. Control automatically moves to **WASH 1**. Display shows:



15. To enter **WASH 1** treatment time, press **CURSOR** (left or right) to select position and **VALUE** (up or down) to select desired number (0-9). Treatment time is input in minutes and seconds within a range of 0 to 10 minutes.

16. Press **CHANGE VALUES** to confirm time entry.

*NOTE: **WASH 1** sequence continues only if time selected is different from 0.*

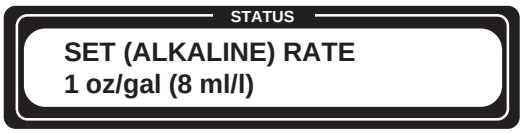
17. Default WASH tank names are: Tank 1- **ALKALINE**, Tank 3 - **ACID** (option). Press **VALUE** (up or down) to change from **ALKALINE** to **ACID**.

*NOTE: Tank 2 is always dedicated to **PRE-WASH, RINSE** and **FINAL RINSE**.*

18. If unit is equipped with a second wash tank (Tank 3), the **WASH 1** Tank name screen will appear to allow operator to determine chemical name. Display shows:

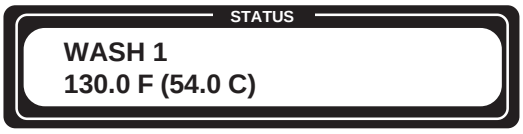
NOTE: If unit is not equipped with a second wash tank (Tank 3), control will move on to the WASH 1 chemical rate message.

19. Press **CHANGE VALUES** to confirm selection. The **WASH 1** chemical rate screen appears. Display shows:



20. Press **VALUE** (up or down) to select chemical rate. Chemical rate is input in oz/gal or in ml/l, according to Service Mode setting (refer to Section 4 in Maintenance Manual P-764329-189), within a range of 0 oz/gal - 4 oz/gal (0 ml/l - 32ml/l).

21. Press **CHANGE VALUES** to confirm chemical rate. The **WASH 1** temperature value screen appears. Display shows:



22. Press **VALUE** (up or down) to select temperature. Treatment temperature is in **Fahrenheit** or in **Celsius**, according to Service Mode setting (refer to Section 4 in Maintenance Manual P-764329-189), within a range of 120°F to 165°F (48.9°C - 74.0°C).

23. Press **CHANGE VALUES** to confirm temperature selection. The **MID-RINSE** treatment screen appears. Display shows:

24. Press **VALUE** (up or down) to select between **YES** or **NO**.

*NOTE: **MID-RINSE** is non-recirculated and time setting is not adjustable.*

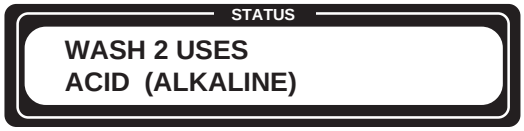
25. Press **CHANGE VALUE** to confirm selection. The **WASH 2** time value screen appears. Display shows:

26. To enter **WASH 2** treatment time, press **CURSOR** (left or right) and **VALUE** (up or down). Treatment time is input in minutes and seconds within a range of 0 to 10 minutes.

27. Press **CHANGE VALUES** to confirm selection.

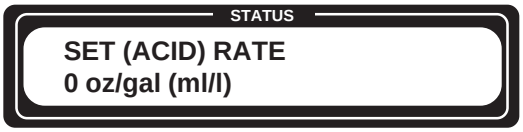
*NOTE: **WASH 2** sequence continues only if time selected is different from 0.*

28. If unit is equipped with a second wash tank, the **WASH 2** tank name screen appears. Display shows:



*NOTE: If unit is not equipped with a second wash tank, control will move on to the **WASH 2** chemical rate message.*

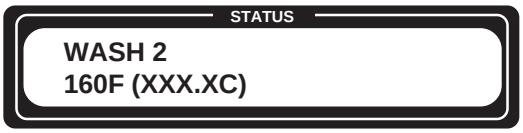
29. Press **VALUE** (up or down) to change **ACID** to **ALKALINE**. Press **CHANGE VALUES** to confirm selection. The **WASH 2** chemical rate value screen appears. Display shows:



30. Press **VALUE** (up or down) to select chemical rate. Chemical rate is input in oz/gal or in ml/l, according to Service Mode setting (refer to Section 4 in Maintenance Manual P-764329-189), within a range of 0 oz/gal - 4 oz/gal (0 ml/l - 32ml/l).

CHANGE VALUES

31. Press **CHANGE VALUES** to confirm chemical entry. The **WASH 2** temperature value screen appears. Display shows:

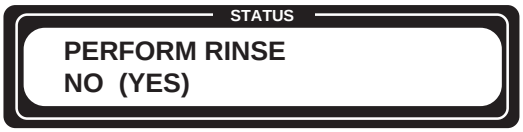


VALUE

32. Press **VALUE** (up or down) to select **WASH 2** temperature. Temperature is input in Fahrenheit or in Celsius, according to Service Mode setting (refer to Section 4 in Maintenance Manual P-764329-189), within a range of 120°F - 165°F (48.9°C - 74°C).

CHANGE VALUES

33. Press **CHANGE VALUES** to confirm temperature selection. The **RINSE** screen appears. Display shows:



VALUE

34. Press **VALUE** (up or down) to select between YES or NO.

*NOTE: **RINSE** is non-recirculated and time setting is not adjustable.*

CHANGE VALUES

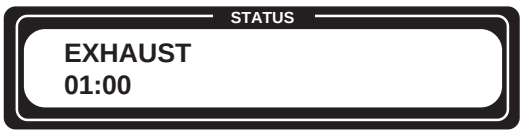
35. Press **CHANGE VALUES** to confirm **YES** or **NO**. The **FINAL RINSE** time value screen appears. Display shows:

CURSOR VALUE

36. To enter Final Rinse treatment time, press **CURSOR** (left or right) and **VALUE** (up or down). Treatment time is input in minutes and seconds within a range of 0 to 8 minutes.

CHANGE VALUES

37. Press **CHANGE VALUES** to confirm time selection. Final Rinse temperature can only be adjusted in Service Mode. The **VAPOR EXHAUST** time value screen appears. Display shows:



CURSOR VALUE

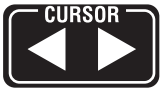
38. To enter **VAPOR EXHAUST** treatment time, press **CURSOR** (left or right) and **VALUE** (up or down). Treatment time is input in minutes and seconds within a range of 1 to 5 minutes.

*NOTE: **VAPOR EXHAUST** treatment cannot be bypassed.*

CHANGE VALUES

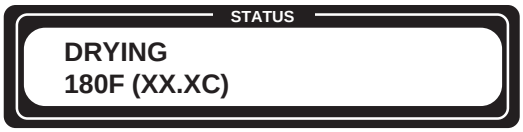
39. Press **CHANGE VALUES** to confirm time entry.

40. If unit is equipped with the Drying option, the **DRYING** time value screen appears. Display shows:



41. To enter **DRYING** treatment time, press **CURSOR** (left or right) and **VALUE** (up or down). Treatment time is input in minutes and seconds within a range of 0 to 15 minutes.

42. Press **CHANGE VALUES** to confirm entry. Drying sequence continues only if time selected is different from 0. The Drying temperature screen appears. Display shows:



43. To enter **DRYING** treatment temperature, press **VALUE** (up or down) to select temperature. Treatment temperature is input in Fahrenheit or in Celsius, according to Service Mode setting (refer to Section 4 in Maintenance Manual P-764329-189), within a range of 140 to 180°F (60°C - 82.2°C).

44. Press **CHANGE VALUES** to confirm temperature selection.

45. The REFRESH RATE feature allows operator to refresh chemical solutions with fresh water after each cycle. REFRESH RATE is adjustable within a range of 15 to 100%. If the REFRESH RATE is set at 100%, the chemical tank will be completely drained and filled with fresh water.

46. The **ALKALINE** tank REFRESH RATE screen appears. Display shows:

47. To enter the **ALKALINE** tank REFRESH RATE, press **VALUE** (up or down) to select percentage. REFRESH RATE can be adjusted within a range of 15 to 100%.

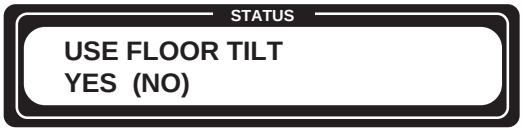
48. Press **CHANGE VALUES** to confirm REFRESH RATE selection.

49. If unit is equipped with a second chemical tank, display shows:

50. To enter the **ACID** Tank REFRESH RATE value, press **VALUE** (up or down) to select percentage. REFRESH RATE can be adjusted within a range of 15 to 100%.

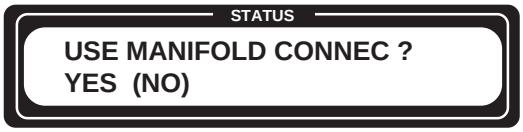
51. Press **CHANGE VALUES** to confirm REFRESH RATE.

52. If unit is equipped with **AUTOMATIC FLOOR TILT** option, the **AUTOMATIC FLOOR TILT** screen appears. Display shows:



53. Press **VALUE** (up or down) to change **YES** to **NO**. Press **CHANGE VALUES** to confirm selection.

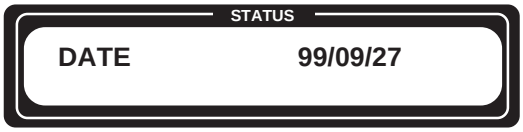
54. If unit is equipped with the **MANIFOLD COUPLING** option, the **MANIFOLD COUPLING** screen appears. Display shows:



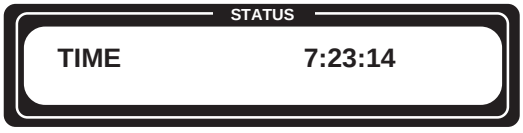
*NOTE: The **MANIFOLD COUPLING** display is not shown if **AUTOMATIC FLOOR TILT** option is enabled.*

55. Press **VALUE** (up or down) to change **YES** to **NO**. Press **CHANGE VALUES** to confirm selection.

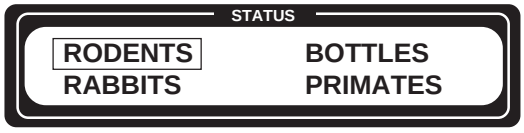
56. Date menu appears. To modify date, press **VALUE** (up or down) to change numbers. Press **CHANGE VALUES** to confirm selection. Display shows:



57. Time menu appears. To modify time, press **VALUE** (up or down) to change numbers. Press **CHANGE VALUES** to confirm selection. Display shows:



58. The Change Values Mode sequence is completed. Display returns to first Cycle Menu. Display shows:



☐ *indicates flashing position.*

Review Cycle Values

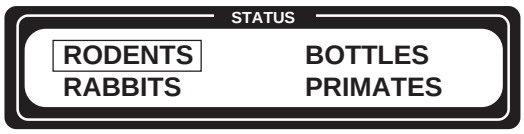
The Review Mode allows the operator to view the current settings of each programmable treatment value for the specific cycle selected. When a cycle is not in progress, each cycle program may be reviewed by accessing the Review Mode.

STOP RESET

*NOTE: The Review Cycle sequence can be aborted at any point by pressing **STOP/RESET**.*

CYCLE MENU

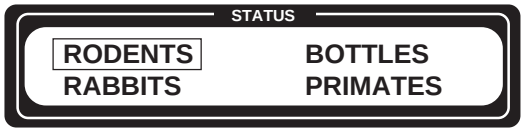
1. Press **CYCLE MENU** until desired cycle menu appears on the screen. Display shows:



☐ *indicates flashing position.*

SELECT CYCLE

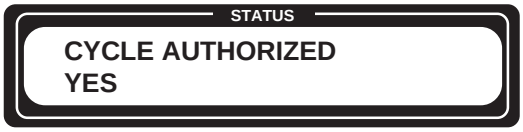
2. Press **SELECT CYCLE** until desired cycle name flashes. Display shows:



☐ *indicates flashing position.*

REVIEW CYCLE

3. Press **REVIEW CYCLE,** display shows:



REVIEW CYCLE

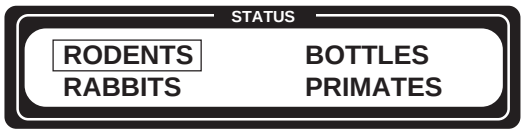
4. Press **REVIEW CYCLE** to access the Review Mode, and view the first treatment value programmed for the selected cycle.

REVIEW CYCLE

5. Continue to press **REVIEW CYCLE** again to sequentially view each treatment value programmed for the selected cycle. Displays for each treatment value programmed will appear one after the other.

STOP RESET

6. When all the cycle values have been reviewed, press **STOP/RESET** to exit Review Mode. Display will return to selected Cycle Menu. Display shows:



☐ *indicates flashing position.*

⚠ WARNING - PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD: Regularly scheduled preventive maintenance, in addition to the faithful performance of the minor maintenance described within this manual, is required for safe and reliable operation of this equipment. Contact STERIS Engineering Service to schedule preventive maintenance.

⚠ WARNING - PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD: Only fully qualified service personnel should make repairs and adjustments to this equipment. Maintenance done by inexperienced, unqualified personnel or installation of unauthorized parts could cause personal injury, invalidate the warranty, or result in costly damage. Contact your STERIS sales or service representative regarding service options.

Maintenance procedures described in this section should be performed regularly at the intervals indicated. The indicated frequencies are minimums and should be increased if washer usage warrants. If a problem occurs, refer to Section 7, Troubleshooting. A sample maintenance record is included in this Section, Table 6-1, which should be used as a guide for the frequency of maintenance. Such a record will prove useful in ensuring proper maintenance. Refer to the Maintenance Manual (7964329-189) for replacement parts list.

Preventive Maintenance Schedule

The following guide should be followed to properly maintain the washer. Contact STERIS Engineering Service when service is required.

Table 6-1. Basil® 9500 Washer Preventive Maintenance Schedule

SERVICE PERFORMED:		Min. Frequency
1.0	**PREPARATION FOR PREVENTIVE MAINTENANCE**	
1.1	Discuss equipment operation with department personnel.	6 x per year
1.2	Inspect printouts for signs of trouble.	6 x per year
1.3	Before servicing equipment, shut off all building services and drain all lines. Use Lockout-Tagout practices when servicing equipment. Always follow local occupational health and safety regulations, as well as electric and plumbing codes.	6 x per year

Table 6-1. Preventive Maintenance Schedule (continued)

	SERVICE PERFORMED:	Frequency
2.0	**STAGE IV CONTROL**	
2.1	Verify that paper takeup is working properly.	6 x per year
2.2	Check printout for darkness, missing dots, etc.	6 x per year
3.0	**DOOR ASSEMBLY (EACH DOOR ON A DOUBLE-DOOR UNIT)**	
3.1	Inspect doors for ease of operation.	6 x per year
4.0	**CHAMBER COMPONENTS**	
4.1	Inspect vertical spray header assembly for free movement, through the window, while washer is operating.	6 x per year
4.2	Inspect vertical spray headers for clogged holes. Clean them if necessary.	Once a week
4.3	Clean debris screen in bottom of wash chamber.	Once a day
4.4	Remove hard water deposits from interior of chamber (use Descaler cycle).	Once a week
4.5	Check sump under floor sections for debris. Use a hose to clean if necessary.	6 x per year
4.6	Check interior light.	6 x per year
4.7	Clean debris from bottom door guide. Use a hose to clean if necessary.	6 x per year
5.0	**CHEMICAL INJECTION PUMP**	
5.1	Lubricate chemical injection pump rollers.	12 x per year
6.0	**SAFETY FEATURES**	
6.1	Test Emergency Safety Guard Rails for proper operation.	6 x per year
6.2	Check warning stickers inside wash chamber for legibility. If stickers are worn out and no longer legible, replace with new ones.	6 x per year
6.3	Test EMERGENCY STOP pushbutton(s) for proper operation.	6 x per year
7.0	**FINAL TEST**	
7.1	Check work area to ensure removal of all materials used during inspection.	every inspection
7.2	Unlock electrical disconnect switch, position to ON and turn all utilities back ON.	every inspection

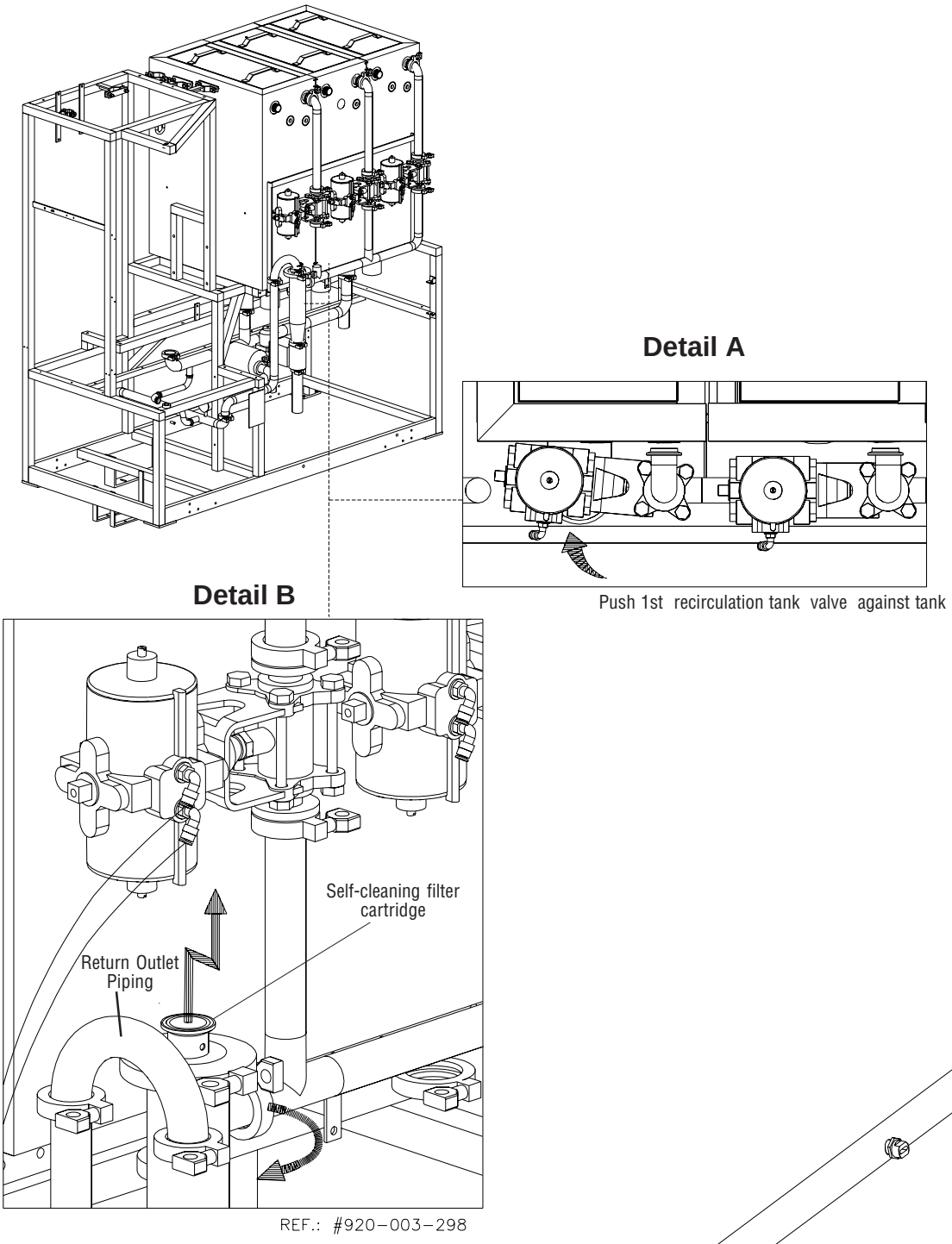


Figure 6-1. Vertical Self-cleaning Filter

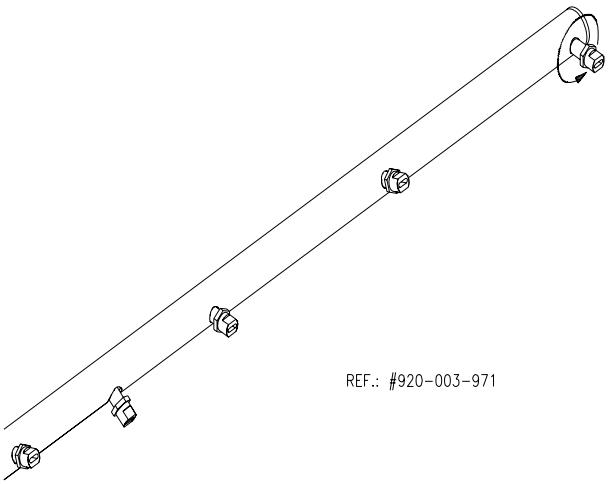


Figure 6-2. Spray Headers

Cleaning Procedures

» Daily Cleaning

WARNING - ELECTRICAL SHOCK AND/OR BURN HAZARD: Disconnect all utilities to washer before servicing. Do not service washer unless all utilities have been properly locked out. Always follow local occupational health and safety regulations, as well as electric and plumbing codes.

WARNING - PERSONAL INJURY HAZARD: Before servicing or cleaning exterior of unit, always press EMERGENCY STOP Pushbutton to de-energize unit.

WARNING - PERSONAL INJURY HAZARD AND/OR EQUIPMENT DAMAGE: Always wear appropriate personal protective equipment (PPE), when cleaning or removing debris from bottom of wash chamber and over suction plate.

WARNING - PERSONAL INJURY HAZARD: Never perform cleaning of wash chamber until full cycle has been completed. If cycle has not been completed, contaminated debris or water may remain in bottom of wash chamber.

NOTE: Always clean unit from loading side.

1. After last cycle of the day, allow unit to cool down.
2. On load side, press **EMERGENCY STOP PUSHBUTTON** to de-energize washer.
3. Using a damp cloth, clean door panels, door windows and exterior of unit.
4. Pull out **EMERGENCY STOP PUSHBUTTON**.
5. When indicator light turns green, press **DOOR OPEN** to open loading doors.
6. Wearing appropriate personal protective equipment (PPE), enter wash chamber and press down **EMERGENCY STOP GUARD RAILS.**
7. Remove gratings.
8. Remove debris from bottom of sump and over suction plate.

NOTE: Always clean sump and suction plate while they are still wet, before debris dries.

9. Replace gratings in bottom of unit.
10. Raise **EMERGENCY STOP GUARD RAILS.**

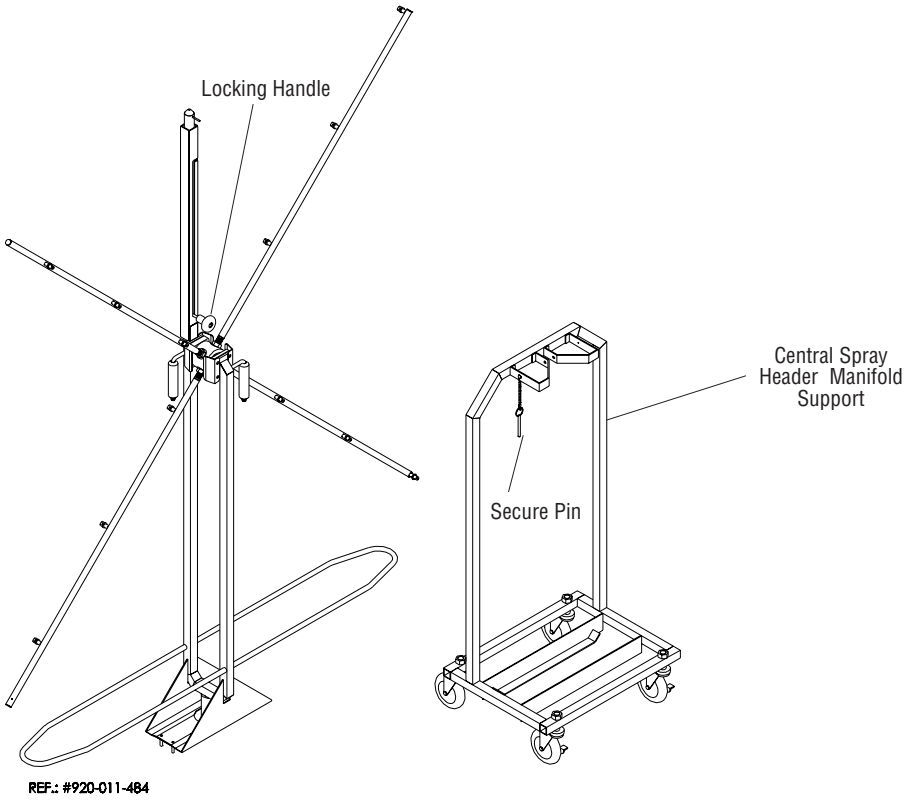


Figure 6-4. Central Spray Header Manifold (option)

Figure 6-5. Bottle Washing Cart (Option)

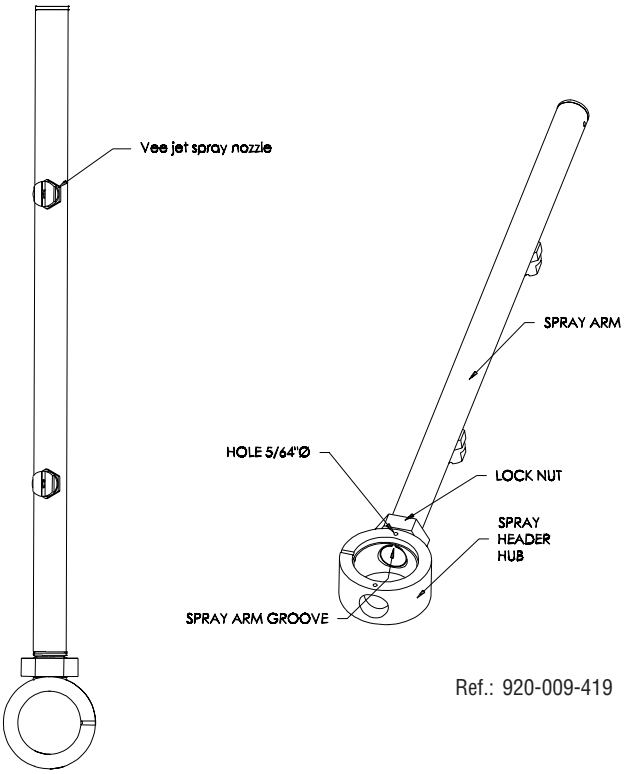


Figure 6-5A Bottle Washing Cart Spray Arms (Detail)

» Weekly Cleaning

WARNING - ELECTRICAL SHOCK/BURN HAZARD: Disconnect all utilities to washer before servicing. Do not service washer unless all utilities have been properly locked out. Always follow local occupational health and safety regulations, as well as electric and plumbing codes.

WARNING - PERSONAL INJURY HAZARD AND/OR EQUIPMENT DAMAGE: Before servicing or cleaning exterior of unit, always press EMERGENCY STOP Pushbutton to de-energize unit.

WARNING - PERSONAL INJURY HAZARD AND/OR EQUIPMENT DAMAGE: Always wear appropriate personal protective equipment (PPE), when cleaning or removing debris from bottom of the wash chamber and over the suction plate.

WARNING - PERSONAL INJURY HAZARD: Never perform cleaning of wash chamber until full cycle has been completed. If cycle has not been completed, contaminated debris or water may remain in bottom of wash chamber.

WARNING - FALL HAZARD: To prevent falls, keep floor dry. Promptly clean up any spills or drippage.

CAUTION : When choosing a chemical, select one with a low chloride content. Chloride is harmful to stainless steel and will deteriorate washer.

1. After last cycle of the day, allow unit to cool down.
2. On load side, press **EMERGENCY STOP PUSHBUTTON** to de-energize washer.
3. Clean washer exterior and door panels as outlined below. Using **AMSCRUB™** (NM400)* for general stains, **PRY®** Cream 1 (NM430)*, and Stainless Steel Polish to keep equipment looking like new.
4. Using a damp cloth or sponge, apply cleaner in a back-and-forth motion, rubbing in same direction as surface grain.
5. Thoroughly wipe off cleaner.
6. Polish surface with a clean, dry, lint-free cloth.
7. Clean door windows, with a general window cleaning product.
8. Dry window with a lint-free cloth.
9. Pull out **EMERGENCY STOP PUSHBUTTON.**
10. When indicator light is green, press **DOOR OPEN** to open doors.
11. Enter wash chamber and press down **EMERGENCY STOP GUARD RAILS.**
12. Remove gratings.
13. Remove debris from bottom of sump and suction plate.
14. Wash chamber interior with a moderately alkaline solution adding tap water.
15. Rinse with tap water and dry with a lint-free cloth.
16. Re-install floor gratings.
17. Raise **EMERGENCY STOP GUARD RAILS.**
18. Press **DOOR CLOSE** to close door.
19. Run a **DRAIN CYCLE** to remove soiled cleaning water from the wash chamber.

» Horizontal Spray Headers and Spray Jets

⚠ CAUTION: Use non-abrasive cleaners when cleaning unit. Follow directions on containers and rub in back-and-forth motion, in same direction as surface grain. Abrasive cleaners will damage stainless steel. Cleaners rubbed in a circular motion or applied with a wire brush or steel wool on door and chamber assemblies can be harmful to stainless steel. Do not use these cleaners on painted surfaces.

1. Remove end spray Jets from horizontal spray headers (see Figure 6-2).
2. Use a fine wire (approximately the wire gauge of a paper clip) to clear sediment from all spray nozzles. Rinse under running water to clean out sediment.
3. Process a Drain Cycle including a Purge Travelers phase (see Section 4) with spray jets removed.
4. Re-install end spray jets on spray headers. Make sure jets are re-installed in proper horizontal position (see Figure 6-2).

» Central Spray Header Manifold (Option)

1. Remove Rotary Spray Holder and Rotary Spray Arms from Accessory.
2. Unscrew spray arms from Spray Arm Hub. Rinse Spray Arms under running water to clean out sediment.
3. Remove End Spray Jets from Spray Arms. Use a fine wire (approximately the wire gauge of a paper clip) to clean out sediment. Rinse under running water (see Figure 6-2).
4. Re-install spray jets on Rotary Spray Arms.
5. Place bushing on top of Rotary Spray Arm Hub and re-install Rotary Spray Arm assembly to Central Spray Header Manifold.

» Rotary Spray Arms on Bottle Washing Cart (Option)

1. Remove Rotary Spray Arms from Bottle Washing Cart (see Figure 6-5).
2. Untighten locknuts to free Rotary Spray Arms. Use a fine wire (approximately the wire gauge of a paper clip) to clean out sediment. Rinse under running water (see Figure 6-2).
3. Clean bushing and rinse under running water.
4. Re-install Rotary Spray Arms on the spray header adaptor and tighten locknuts.

NOTE: To ease assembly, the spray header hub and the bushings can only be installed in one position on the spray header adaptor. Align slot from spray arm to hole on hub (see Figure 6-5A).

5. Re-install Rotary Spray Arm assembly on Bottle Washing Cart.

» Strainers

1. Close building supply lines: hot water, cold water, steam, and air.
2. Remove and clean strainers.
3. Re-install strainers.
4. Open building supply lines.

» Vertical Self Cleaning Filter

IMPORTANT: Intake filter requires periodic inspection and replacement. Initial inspection is suggested once a week, then the user should determine the frequency thereafter.

Remove and clean screen of self-cleaning filter cartridge located on mechanical core as follows:

1. Untighten quick-disconnect clamps on valve. Push Tank 1 recirculation ball valve against Tank 1 (see Figure 6-1, Detail A).

NOTE: Do not replace recirculation valve into its original position. Leaving valve deplaced will ease cleaning of filter.

2. Untighten quick disconnect clamps on self-cleaning filter and piping. Push Return Outlet Piping to the left (see Figure 6-1, Detail B).
3. Lift out self cleaning filter cartridge. Remove debris by scraping exterior surface filter.
4. Rinse filter under running water.
5. Re-insert filter.
6. Move filter piping back into position. Tighten quick-disconnect clamps.
7. Run a cycle to verify for leaks.

Descaler Cycle

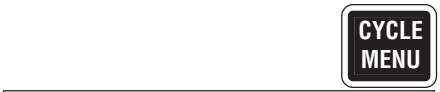
Remove hard water deposits from wash chamber and accessories as follows using the Descaler Cycle.

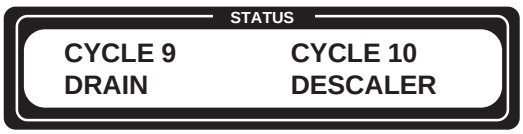
NOTE: Depending on hardness of water being used, it may be necessary to remove hard water deposits more often. Remove deposits from wash chamber and accessories whenever deposits become visible.

» Manual Descaler Cycle

NOTE: Manual Descaler Cycle may have a duration time of approximately 1 hour.

1. Roll Central Spray Header Manifold (option) or Bottle Washing Cart (option) into wash chamber.
2. Connect manifold coupling system (option) to accessory (see Section 4).
3. Press **CYCLE MENU** to access third Factory-Set cycle menu.

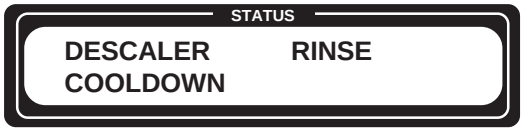




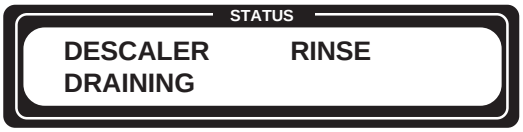
WARNING - CHEMICAL BURN AND/OR EYE INJURY HAZARD: Wear appropriate personal protective equipment (PPE) when using a descaling product. Avoid contact with eyes or skin. If spilled or splashed, flush with water for 15 minutes. If swallowed, DO NOT induce vomiting. Administer an alkali with plenty of water. Seek medical attention immediately.

4. Press **SELECT CYCLE** to select DESCALER. Press **CYCLE START** to start Descaler Cycle. Display shows:

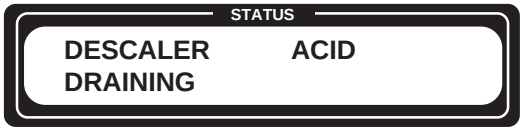
alternating with:



and:



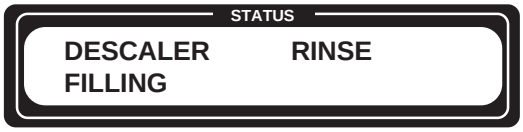
and



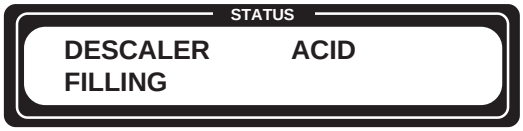
⚠ WARNING - CHEMICAL BURN AND/OR EYE INJURY HAZARD: Wear appropriate personal protective equipment (PPE) when using a descaling product. Avoid contact with eyes or skin. If spilled or splashed, flush with water for 15 minutes. If swallowed, DO NOT induce vomiting. Administer an alkali with plenty of water. Seek medical attention immediately.

5. All tanks will drain completely to ensure that only clean water is being used.
6. When all tanks are completely drained, tanks start filling with clean water. Display shows:

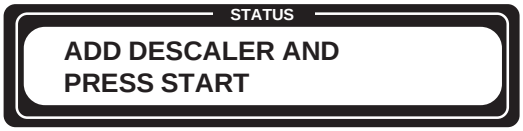
then:



then:



7. When all tanks are filled with clean water, cycle stops and display shows:



DOOR OPEN

8. On load side, press **DOOR OPEN** to open load door.

DOOR CLOSE

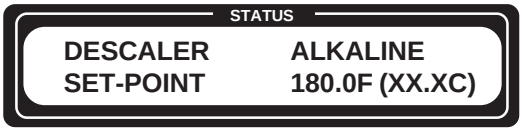
9. Pour 76 oz (2,25 l) of liquid descaler into sump. Press **DOOR CLOSE** to close load door.

CYCLE START

10. Press **CYCLE START** to run DESCALER cycle. Water from sump will be sent to Alkaline Tank to initiate descaling. Display shows:

11. While DESCALER cycle is in progress. Display shows:

alternating with...



and...

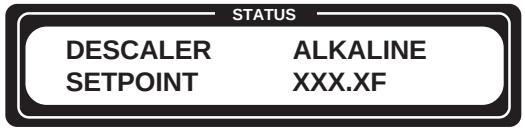
and...

then...

⚠ WARNING - CHEMICAL BURN AND/OR EYE INJURY HAZARD: Wear appropriate personal protective equipment (PPE) when using a descaling product. Avoid contact with eyes or skin. If spilled or splashed, flush with water for 15 minutes. If swallowed, DO NOT induce vomiting. Administer an alkali with plenty of water. Seek medical attention immediately.

12. Unit will repeat the same procedure from steps 7 to 11, for **RINSE** and **ACID** tanks. A descaler liquid must be added manually into sump each time that message appears on screen.
13. Once the descaling of all tanks is completed, the washer will proceed to rinse all tanks. Display shows:

alternating with:

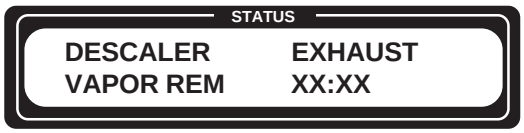


and...

and...

then...

14. The same sequence will be repeated for **RINSE** and **ACID** tanks.
15. Once Rinse phase is completed in all tanks, a Vapor Removal phase starts. Display shows:



16. When indicator light turns green, press **DOOR OPEN** on load side, to open door and allow wash chamber to cool down.
17. Check Suction Plate in bottom of sump for debris. Clean Suction Plate if necessary.

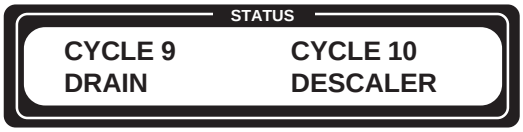
» Automatic Descaler Cycle

NOTE: Automatic Descaler Cycle has a duration time of 1 hour.

NOTE: If unit has been configurated with Central Spray Header Manifold or Bottle Washing Cart options, you must use accessory to perform Descaler Cycle.

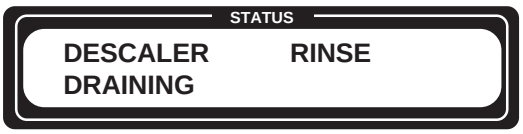
1. Roll Central Spray Header Manifold (option) or Bottle Washing Cart (option) into wash chamber.
2. Connect manifold coupling system (option) to accessory (see Section 4).

3. Press **CYCLE MENU** to access third Factory-Set cycle menu.

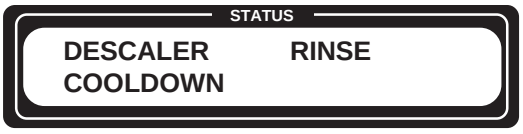


4. Press **SELECT CYCLE** to select DESCALER. Press **CYCLE START** to start Descaler Cycle. Display shows:

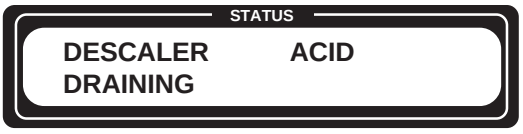
then...



then...

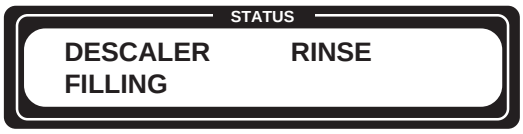


and

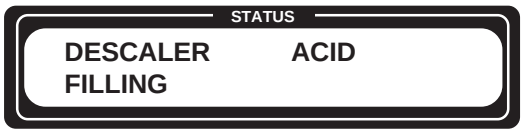


5. All tanks will drain completely to ensure that only clean water is being used.
6. When all tanks are completely drained, tanks start filling with clean water. Display shows:

then:



then:



7. When all tanks are filled with clean water, display shows:

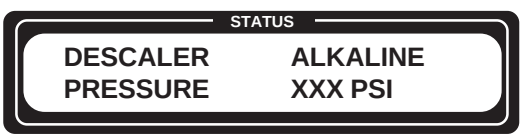
8. When sump is filled with water, Descaler injection starts. Display shows:

9. While cycle is in progress, display shows:

alternating with:

and...

and...



then...

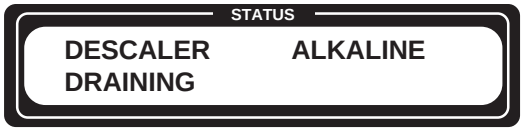
10. Sequence from steps 7 to 9 will be repeated for **RINSE** and **ACID** tanks.
11. Once the descaling of all tanks is completed, the unit will proceed to rinse all tanks. Display shows:

alternating with...

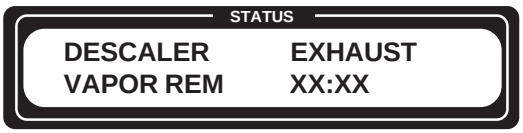
and...

and...

then...



12. The same procedure will be repeated for **RINSE** and **ACID** tanks.
13. Once Rinse phase is completed in all tanks, a Vapor Removal phase starts. Display shows:



14. When indicator light on load side turns green, press **DOOR OPEN** to open door and allow wash chamber to cool down.
15. Check suction plate in bottom of sump for debris. Clean suction plate if necessary.

Chemical Container Replacement

WARNING - CHEMICAL BURN AND/OR EYE INJURY HAZARD: Washer chemicals are caustic and can cause adverse effects to exposed tissues. Do not get in eyes, on skin or attempt to ingest by mouth.

• Read and follow the precautions and instructions on the chemical label and MSDS prior to handling the chemical, refilling chemical containers or servicing chemical injection pumps or lines.

• Wear appropriate personal protective equipment (PPE) whenever handling chemicals or servicing injection pumps or lines.

To achieve maximum cleaning efficiency, select a chemical appropriate to soil type being processed. Refer to Chemical Specifications in Section 2 and always follow chemical manufacturer's recommendations for amount of chemical to be used.

NOTE: Always use a non-foaming chemical for effective cleaning and proper pump operation.

When chemical is low or has run out:

1. Install a new container.
2. Insert pickup tube into new container.

NOTE: System is self-priming, therefore no other operation is necessary.

NOTE: Contact your local STERIS representative for information on specific cleaning and descaling products recommended for use with this equipment.

Injection Pumps Lubrication and Replacement

WARNING - PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD: Only fully qualified service personnel should make repairs and adjustments to this equipment. Maintenance done by inexperienced, unqualified personnel or installation of unauthorized parts could cause personal injury, invalidate the warranty, or result in costly damage. Contact your STERIS Engineering sales or service representative regarding service options.

WARNING - CHEMICAL BURN AND/OR EYE INJURY HAZARD: Washer chemicals are caustic and can cause adverse effects to exposed tissues. Do not get in eyes, on skin or attempt to ingest by mouth.

• Read and follow the precautions and instructions on the chemical label and MSDS prior to handling chemicals, refilling chemical containers or servicing injection pumps and lines.

• Wear appropriate personal protective equipment (PPE) whenever handling chemicals or servicing injection pumps and lines.

CAUTION: Always use a silicone lubricant to lubricate squeeze tubes. Petroleum-based lubricants, such as Vaseline or grease, will cause squeeze tubes to melt.

1. Each month, have a qualified service technician lubricate section(s) of squeeze tube in contact with pump(s), using Silicone Lubricant (P-117950-599).
2. Each month, check squeeze tube(s) for any leaks or signs of wear. If necessary, replace tube as follows:
   a. If unit is on, position **POWER-OFF/STANDBY** switch to **OFF/STANDBY**.
   b. The injection pumps are located on the mechanical core.
   c. Remove clamps and disconnect the squeeze tube ends from the pickup tube and feed lines.
   d. Remove screws attaching injection pump faceplate to injection pump head. Lift faceplate away from pump head.
   e. To remove squeeze tube from pump head, pull out tube by one end. Discard the tube.
   f. Clean all pump surfaces.
   g. Insert one end of new tube into pump head and rotate roller block manually.
   h. Liberally spread Silicone Lubricant (P-117950-599) over rollers in the roller block and all tubing surfaces in contact with the pump head.
   i. Return faceplate to pump head and fasten with screws previously removed.
   j. Connect ends of tube to pickup tube and feed lines. Attach clamps to both lines.
   k. Position **POWER-OFF/STANDBY** switch to **POWER**.
   l. Initiate a cycle to verify squeeze tube operation.

Printer Paper Roll Replacement

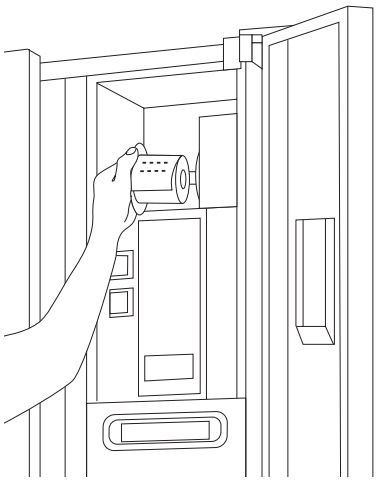


Figure 6-6. Remove Take-up Spindle

NOTE: Do not operate printer without paper.

1. Open printer door.
2. Grasp remaining paper and pull it upward and out of printer.
3. Remove take-up spindle from its drive mechanism by pulling it to the left (see Figure 6-6).
4. Remove paper roll from take-up spindle and set empty take-up spindle aside.
5. Lower the platen and remove the lower paper spindle by pulling it straight forward.
6. Place new paper roll onto the lower spindle with the paper feeding downward from the back of the paper roll (see Figure 6-7).

NOTE: Check that the paper roll is positioned correctly. Thermal printer will not print if the paper roll is inserted backwards. Do not use other brands of thermal paper, use only STERIS thermal paper (Part Number 129359-008). Damage to printer mechanisms can occur if paper of different width or thickness is used.

7. Place lower spindle (with new paper roll) back into position by pressing from the front until it snaps into place.
8. Pull four or five inches of paper out from roll and tear the corners off the end to form a "V" tab (see Figure 6-7).
9. Slide tab of paper roll into printer from the back (with platen still in down position) until it exits from front of printer.
10. Grasp tab of paper, pull up 10 to 12 inches of paper, and feed this paper through opening in platen (see Figure 6-8).
11. Raise platen back up into position and snap in place under catch.
12. Insert tab of new paper roll into slot of take-up spindle (see Figure 6-8) and rotate spindle to secure paper in slot (see Figure 6-9).
13. Press take-up spindle back onto the drive mechanism and allow motor to rotate spindle to verify paper is secured to take-up roll (see Figure 6-10).
14. Close printer door.

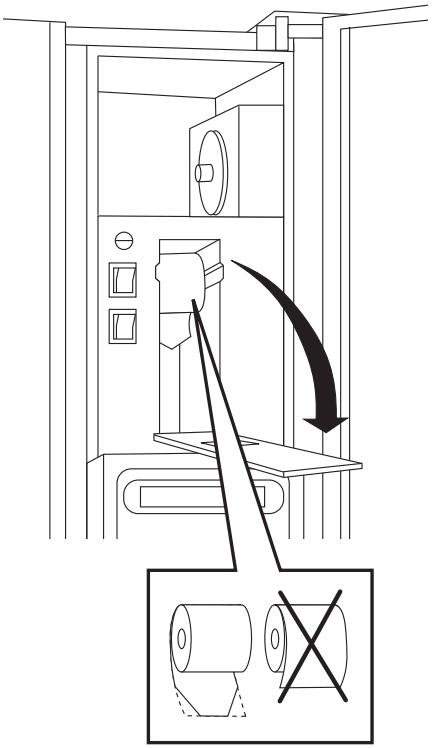


Figure 6-7. Install Paper Roll

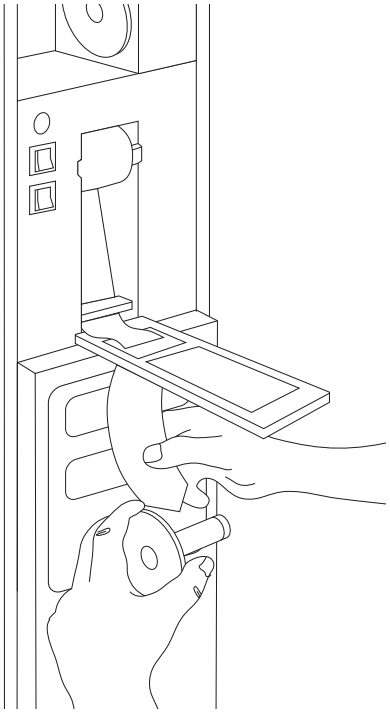


Figure 6-8. Feed Paper Through Printer

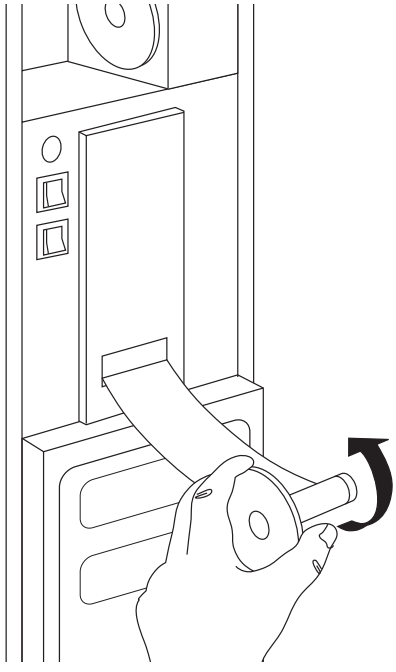


Figure 6-9. Rotate Take-up Spindle

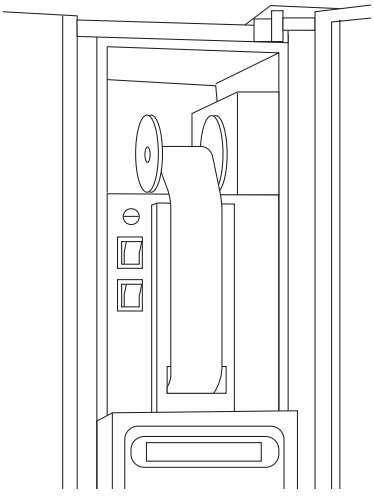


Figure 6-10. Verify Paper Installation

Thermal Paper Storage

Thermal paper is subject to fading with time, humidity and exposure to light.

It is the manufacturer's recommendation that thermal paper be stored in a dark place with an average ambient temperature of less than 77°F (25°C) and a relative humidity less than 65%. Under these conditions, the paper remains readable for at least five years. It is recommended that if printed data is to be retained for periods of time longer than 5 years (6-25 years), an additional photocopy should be made for record retention. In any case, a duplicate set of records should be maintained in the files of the engineering or maintenance departments.

Thermal paper begins to develop color at about 158°F (70°C), however, under humid conditions, it might begin to develop at an accelerated rate. If stored for 24 hours at 140°F (60°C), the paper shows some signs of development. It also shows signs of development if stored for 24 hours at 113°F (45°C) and a relative humidity of 90%.

Do not store thermal paper next to other chemically treated papers - such as pressure sensitive paper or other type of recording round charts - as this may cause fading in print. If thermal paper is to be stored in the same area, always ensure it and other chemically treated papers are kept in separate envelopes.

Thermal paper discolors when exposed to direct sunlight.

TROUBLESHOOTING

7

WARNING - PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD: Only fully qualified service personnel should make repairs and adjustments to this equipment. Maintenance done by inexperienced, unqualified personnel or installation of unauthorized parts could cause personal injury, invalidate the warranty, or result in costly damage. Contact your STERIS sales and service representative regarding service options.

WARNING - ELECTRIC SHOCK AND BURN HAZARD: Disconnect all utilities to washer before servicing. Do not service washer unless all utilities have been properly locked out. Always follow local occupational health and safety regulations, as well as electric and plumbing codes.

WARNING - FALL HAZARD: To prevent falls, keep floor dry. Promptly clean up any spills or drippage.

This section describes the types of washer malfunctions which may occur, and indicates probable causes and corrective actions.

If you are unable to correct the problem with use of the Troubleshooting Charts, or if a problem occurs that is not described on the charts, please call your STERIS Engineering Service representative.

NOTE: Never permit unqualified persons to service the washer.

Table Descriptions

Table 7-1 – Problems where NO alarm screen and printout occur.

Table 7-2 – Problems where alarm screen and/or printout occur.

Table 7-1. Troubleshooting Chart - No Alarm Screen or Printout

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
1. Interior light does not turn on.	1. POWER-OFF/STANDBY switch in OFF/STANDBY position – Position to POWER. 2. Unit is in Service Mode – Switch unit to Operating Mode by pressing EXTEND CYCLE touch pad. 3. Fuse is blown – Call Service. 4. Defective relay – Call Service. 5. Defective fluorescent or ballast – Call Service.

Table 7-1. Troubleshooting Chart – No Alarm Screen or Printout (continued)

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
2. Screen indicates "SERVICE TEST" when POWER-OFF/STANDBY switch is positioned to POWER.	1. Unit in Service Mode - Switch washer to Operating Mode by pressing EXTEND CYCLE touch pad. 2. If condition recurs - Call Service.
3. Printer does not operate (display is blank) when building electrical supply switch is ON.	1. Printer ribbon cable unplugged from printer PC board – Call Service. 2. Printer is defective – Call Service. 3. Printer PC Board is defective – Call Service.
4. Generated printout is light or blank or parts of characters are missing on generated printout.	1. Printer paper installed backwards – Re-install paper roll with paper feeding downward from the back of the roll. 2. Incorrect printer paper used – Use recommended products; do not use other brands of thermal paper, use only STERIS thermal paper (Part number P-129359-008). 3. Printer head is dirty – Call Service. 4. Printer is defective – Call Service. 5. Printer PC board is defective – Call Service.
5. Normal display when POWER/OFF-STANDBY switch is turned on, but printer will not print.	1. Printer ribbon cable unplugged from printer PC board – Call Service. 2. Printer PC board defective – Call Service. 3. Printer is defective – Call Service.
6. Printer printout is erratic.	1. Printer PC board defective – Call Service. 2. Printer is defective – Call Service.
7. No sound acknowledgment (beep signal) when touch pads are pressed.	1. Touch panel unplugged – Call Service. 2. Touch panel defective – Call Service.
8. Display locked up; pressing STOP/RESET touch pad has no effect.	1. Push and pull EMERGENCY STOP pushbutton. 2. If condition recurs – Call Service
9. Thornton 200 pH Controller does not operate (display is blank) when building electrical supply disconnect switch is ON.	1. Call Service.

Table 7-1. Troubleshooting Chart – No Alarm Screen or Printout (continued)

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
10. Control does not communicate with Thornton 200 pH Controller.	1. Call Service.
11. Spray jets clogged.	1. Check and clean spray jets. 2. If condition recurs – Call Service.
12. Treatment stops for no apparent reason.	1. Chamber doors open – Close doors and press CYCLE/START touch pad. 2. If condition recurs – Call Service.
13. Pump does not start during a treatment.	1. Chamber doors open – Close doors and press CYCLE/START touch pad. 2. If condition recurs - Call Service.
14. Insufficient or no water entering chamber through spray system.	1. Horizontal spray headers clogged – Clean spray headers. 2. Chamber debris screen clogged – Clean debris screen. 3. Self-cleaning filter clogged – Clean filter. 4. If condition recurs – Call Service.
15. Insufficient or no water entering side tanks during treatment.	1. Supply valves not fully open – Call Service.
16. Foam in chamber or inside tanks.	1. Wrong type of detergent. Refer to detergent specifications in Section 2 and follow manufacturer's recommendations for amount of detergent to be used. 2. Too much chemical is injected during treatment – Check chemical injection calibration in Service Mode – Call Service.
17. Load comes out dirty.	1. Wrong type of detergent or inappropriate concentration – Refer to detergent specifications in Section 2 and follow manufacturer's recommendations for amount of detergent to be used. 2. Horizontal spray headers clogged – Clean spray headers. 3. If condition recurs – Call Service.
18. Detergent leaks from mechanical core.	1. Call Service.

Table 7-1. Troubleshooting Chart – No Alarm Screen or Printout (continued)

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
19. Water leaks from washer.	1. Piping is leaking – Call Service. 2. Damaged gaskets on top or bottom of doors – Call Service. 3. Door side gaskets badly adjusted – Call Service.
20. Chamber does not drain as usual (normally, chamber/sump is empty).	1. Chamber debris screen clogged – Clean screen. 2. Self-cleaning filter clogged – Clean filter. 3. If condition recurs – Call Service.
21. If unit is equipped with optional double doors, unload door fails to open.	1. Safety interlock feature engaged. Unload door will not open until cycle is completed .
22. Insufficient or no water entering chamber through central spray header manifold (if option applies).	1. Bad connection between spray header and manifold – Install header correctly. 2. Clogged spray nozzles – Clean spray nozzles. 3. Incorrect cycle parameters 4. If condition recurs – Call Service.
23. Excessive vapor exhausting from doors.	1. Fixed spray jets clogged – Check and clean jets. 2. Damaged or badly adjusted gaskets – Call Service. 3. Damaged or badly adjusted damper – Call Service. 4. If condition recurs – Call Service.
24. Vapor not removed from chamber.	1. Insufficient exhaust time – Increase exhaust time. 2. Damaged or badly adjusted Damper. 3. If condition recurs – Call Service.
25. Noisy exhaust fan.	1. Call Service.
26. Noisy Drying fan.	1. Call Service.
27. High pressure pump abnormally noisy.	1. Call Service.

Table 7-1. Troubleshooting Chart – No Alarm Screen or Printout (continued)

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
28. Suction pump abnormally noisy.	1. Call Service.
29. Doors open and /or close too slowly and/ or vibrate.	1. Cable and pulley malfunction – Call Service. 2. Door rails malfunction in wash chamber – Call Service. 3. If condition recurs – Call Service.
30. Doors do not open completely.	1. Doors obstructed – Remove obstruction. 2. Cables and pulleys malfunction – Call Service. 3. Doors guiding system malfunction – Call Service. 4. Floor tilt still in upper position – Call Service. 5. Air flow control improperly adjusted – Call Service. 6. Air pressure improperly adjusted – Call Service.
31. Doors open and/or close too quickly.	1. Air flow control improperly adjusted – Call Service. 2. Air pressure improperly adjusted – Call Service.
32. Travelers vibrating.	1. Cable(s) and pulley(s) malfunction – Call Service. 3. Air flow control improperly adjusted – Call Service. 4. Air pressure improperly adjusted – Call Service.
33. Travelers are moving too slowly.	1. Cable and pulley malfunction – Call Service. 2. Air flow control improperly adjusted – Call Service. 3. Air pressure improperly adjusted – Call Service.
34. Auto-tilt floor lifting does not operate properly.	1. Load exceeds 800 lbs (363 kg) – Check load weight. 2. If condition recurs – Call Service.
35. Incomplete Drying.	1. Insufficient time set for drying phase – Increase drying time. 2. If condition recurs – Call Service.
36. Abnormal draining of wash chamber.	1. Self-cleaning filter clogged – Clean filter. 2. If condition recurs – Call Service.
37. Chemical pump(s) malfunction.	1. Fuse is blown – Call Service. 2. Defective relay – Call Service. 3. Defective chemical pump – Call Service.

Table 7-2. Troubleshooting Chart - Alarm Screen and/or Printout

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
1. Tank too long to fill. Alarm sounds and screen displays: ALARM: *(TANK NAME)* TOO LONG TO FILL Printer records: * ALARM *(TANK NAME)* TOO LONG TO FILL HH:MM:SS XX/XX/XX	1. Supply valves closed – Press ALARM REPLY touch pad to silence alarm buzzer. 2. Building air supply too low – Press ALARM REPLY. 3. If STOP is pressed during the opening of the Unload Door. If operator does not press START within 4 minutes, alarm will recur every 4 minutes (default) until a new cycle is started.
2. Tank too long to drain. Alarm sounds and screen displays: ALARM: *(TANK NAME)* TOO LONG TO DRAIN Printer records: * ALARM (TANK NAME) TOO LONG TO DRAIN HH:MM:SS XX/XX/XX	1. Supply valves closed – Press ALARM REPLY touch pad to silence alarm buzzer. 2. Building air supply too low – Press ALARM REPLY. 3. Call Service.
3. Alarm sounds and screen displays: ALARM: *(DET. NAME)* INJ NOT REACHED Printer records: * ALARM *(DETERGENT NAME)* INJ NOT REACHED HH:MM:SS XX/XX/XX	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Detergent empty – Replace container. 3. If condition recurs – Call Service.
4. Alarm sounds and screen displays: ALARM:PUMP PRESSURE TOO LOW Printer records: * ALARM PUMP PRESSURE TOO LOW HH:MM:SS XX/XX/XX	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Debris screen filter clogged – Clean filter. 3. Self-cleaning filter clogged – Clean filter 4. If condition recurs – Call Service.

Table 7-2. Troubleshooting Chart – Alarm Screen and/or Printout (continued)

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
5. Alarm sounds and screen displays: ALARM: TRAVELER IS NOT MOVING Printer records: * ALARM TRAVELER IS NOT MOVING HH:MM:SS XX/XX/XX	1. Press ALARM REPLY touch pad to silence alarm buzzer. Traveler system takes more than 18 seconds to go up or down during the recirculation phase. 2. Traveler system is obstructed – Remove obstruction. 3. Building air supply too low – Call Service. 4. If condition recurs – Call Service.
6. Alarm sounds and screen displays: ALARM: COOL DOWN WATER LEVEL DEFECT. Printer records: * ALARM: COOL DOWN WATER LEVEL DEFECT. HH:MM:SS XX/XX/XX	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Press CYCLE /START touch pad to resume operation. 3. If condition recurs – Call Service.
7. Alarm sounds and screen displays: ALARM: PRESSURE PUMP OVERLOADS TRIPPED Printer records: * ALARM PRESSURE PUMP OVERLOADS TRIPPED HH:MM:SS XX/XX/XX	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Control detects a malfunction with the pressure pump – Call Service.
8. Alarm sounds and screen displays: ALARM: SUCTION PUMP OVERLOADS TRIPPED Printer records: * ALARM SUCTION PUMP OVERLOADS TRIPPED HH:MM:SS XX/XX/XX	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Control detects a malfunction with the suction pump – Call Service.

Table 7-2. Troubleshooting Chart – Alarm Screen and/or Printout (continued)

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
9. Alarm sounds and screen displays: ALARM: EXHAUST FAN OVERLOADS TRIPPED Printer records: * ALARM EXHAUST FAN OVERLOADS TRIPPED HH:MM:SS XX/XX/XX	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Control detects a malfunction with the exhaust fan – Call Service.
10. Alarm sounds and screen displays: ALARM: DRYING FAN OVERLOADS TRIPPED Printer records: * ALARM DRYING FAN OVERLOADS TRIPPED HH:MM:SS XX/XX/XX	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Controls detects a malfunction with the drying fan – Call Service.
11. Alarm sounds and screen displays: ALARM: NEUTRAL. PUMP OVERLOADS TRIPPED Printer records: * ALARM NEUTRAL. PUMP OVERLOADS TRIPPED HH:MM:SS XX/XX/XX	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Control detects a malfunction with the neutralizing pump – Call Service.
12. Alarm sounds and screen displays: ALARM: pH METER ERROR Printer records: * ALARM pH METER ERROR HH:MM:SS XX/XX/XX	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. pH meter detects water pH level too low and too high simultaneously – Call Service.

Table 7-2. Troubleshooting Chart – Alarm Screen and/or Printout (continued)

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
13. Load doors remain closed after DOOR OPEN touch pad was pressed. Alarm sounds and screen displays: ALARM: LOAD DOORS DID NOT OPEN Printer records: * ALARM LOAD DOORS DID NOT OPEN HH:MM:SS XX/XX/XX	1. Air supply valves closed or air pressure is below specifications -– Press ALARM REPLY touch pad to silence alarm buzzer – Call Service.
14. Load doors remain open after DOOR CLOSE touch pad was pressed. Alarm sounds and screen displays: ALARM: LOAD DOORS DID NOT CLOSE Printer records: * ALARM LOAD DOORS DID NOT CLOSE HH:MM:SS XX/XX/XX	1. More than 20 seconds needed to close load door. 2. Air supply valves closed or air pressure is below specifications -– Press ALARM REPLY touch pad to silence alarm buzzer – Call Service. 3. Doors are obstructed — Remove obstruction behind or between doors. 4. If condition recurs — Call Service.
15. Screen displays: LOAD DOORS ARE OPEN Printer records: * ALARM LOAD DOORS ARE OPEN HH:MM:SS XX/XX/XX	1. Loss of air supply during a cycle — Call Service. 2. Door sensors defective — Call Service.
16. If washer is equipped with optional double doors, unload-end door remains closed after DOOR OPEN touch was pressed. Alarm sounds and screen displays: ALARM: UNLOAD DOORS DID NOT OPEN Printer records: * ALARM UNLOAD DOORS DID NOT OPEN HH:MM:SS XX/XX/XX	1. Air supply valves closed or air pressure is below specification – Press ALARM REPLY touch pad to silence alarm buzzer - Call Service.

Table 7-2. Troubleshooting Chart – Alarm Screen and/or Printout (continued)

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
17. If washer is equipped with optional double doors, unload-end door remains open after DOOR CLOSE touch pad was pressed. Alarm sounds and screen displays: ALARM: UNLOAD DOORS DID NOT CLOSE Printer records: * ALARM UNLOAD DOORS DID NOT CLOSE HH:MM:SS XX/XX/XX	1. More than 20 seconds needed to close unload doors. 2. Air supply valves closed or air pressure is below specification – Press ALARM REPLY touch pad to silence alarm buzzer. 3. Doors are obstructed – Remove obstruction behind or between doors. 4. If condition recurs – Call Service.
18. If washer is equipped with optional double doors, load-end DOOR OPEN touch pad was pressed with unload-end door open. Screen displays: ALARM: UNLOAD DOORS ARE OPEN Printer records: * ALARM UNLOAD DOORS ARE OPEN HH:MM:SS XX/XX/XX	1. Loss of air supply during a cycle — Call Service. 2. Close Unload Doors 3. Door sensors defective — Call Service.
19. Screen displays: MAINTENANCE DUE CALL SERVICE Printer records: MAINTENANCE DUE	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Call Service.
20. Alarm tone sounds and screen displays: ALARM: WATER TOO LONG TO HEAT Printer records: * ALARM WATER TOO LONG TO HEAT HH:MM:SS XX/XX/XX	1. Water temperature time-out alarm has elapsed before recirculation water temperature setpoint is reached. 2. Steam supply valves closed or steam pressure below specifications. Press ALARM REPLY touch pad to silence alarm buzzer – Call Service.

Table 7-2. Troubleshooting Chart – Alarm Screen and/or Printout (continued)

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
21. Alarm sounds and screen displays: ALARM: WATER TOO LONG TO COOL Printer records: * ALARM WATER TOO LONG TO COOL HH:MM:SS XX/XX/XX	1. Cooldown time-out alarm has elapsed before water temperature in cooldown tank reaches temperature setpoint. 2. Cold water supply valve closed or temperature above specifications. Press ALARM REPLY to silence alarm buzzer – Call Service.
22. Alarm sounds and screen displays: ALARM: TRAVELER SENSORS DEFECTIVE Printer records: * ALARM TRAVELER SENSORS DEFECTIVE HH:MM:SS XX/XX/XX	1. Control detects traveler system in up and down positions simultaneously. 2. Press ALARM REPLY touch pad to silence alarm buzzer. 3. Defective Traveler Cylinder sensors – Call Service.
23. Alarm sounds and screen displays: ALARM: pH CANT BE NEUTRALIZED Printer records: * ALARM pH CANT BE NEUTRALIZED HH:MM:SS XX/XX/XX	1. Water in the cooldown tank is not neutralized after 16 trials. 2. Press ALARM REPLY touch pad to silence alarm buzzer. 3. Neutralizant chemical container empty. 4. Defective cooldown tank pH injection pump. 5. Defective pH probe (J1). 6. Call Service.
24. Alarm sounds and screen displays: ALARM: BOOSTER RTD IS DEFECTIVE Printer records: * ALARM BOOSTER RTD IS DEFECTIVE HH:MM:SS XX/XX/XX	1. Open or short circuit on Booster (in-line heat exchanger) RTD. 2. Press ALARM REPLY touch pad to silence alarm buzzer. 3. Call Service

Table 7-2. Troubleshooting Chart – Alarm Screen and/or Printout (continued)

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
25. Alarm sounds and screen displays: ALARM: DRYING RTD IS DEFECTIVE Printer records: * ALARM DRYING RTD IS DEFECTIVE HH:MM:SS XX/XX/XX	1. Open or short circuit on Drying RTD. 2. Press ALARM REPLY touch pad to silence alarm buzzer. 3. Call Service.
26. Alarm sounds and screen displays: ALARM: COOLDOWN RTD IS DEFECTIVE Printer records: * ALARM COOLDOWN RTD IS DEFECTIVE HH:MM:SS XX/XX/XX	1. Open or short circuit on Cooldown RTD. 2. Press ALARM REPLY touch pad to silence alarm buzzer. 3. Call Service.
27. Alarm sounds and screen displays: ALARM: PUMP PRESSURE IS DEFECTIVE Printer records: * ALARM PUMP PRESSURE IS DEFECTIVE HH:MM:SS XX/XX/XX	1. Open or short circuit on Pressure Transmitter. 2. Press ALARM REPLY touch pad to silence alarm buzzer. 3. Call Service.
28. Alarm sounds and screen displays: ALARM: DRYING TOO LONG TO HEAT Printer records: * ALARM DRYING TOO LONG TO HEAT HH:MM:SS XX/XX/XX	1. Drying temperature time-out alarm has elapsed before air temperature reaches setpoint. 2. Steam supply valves closed or steam pressure below specifications. Press ALARM REPLY to silence alarm buzzer — Call Service.

Table 7-2. Troubleshooting Chart – Alarm Screen and/or Printout (continued)

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
29. Water flowmeter is defective. Alarm sounds and screen displays: ALARM: WATER FLOW METER IS DEFECTIVE Printer records: * ALARM WATER FLOW METER IS DEFECTIVE HH:MM:SS XX/XX/XX	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Call Service.
30. Alarm sounds and screen displays: ALARM: ALKALINE PUMP IS DEFECTIVE Printer records: * ALARM ALKALINE PUMP IS DEFECTIVE HH:MM:SS XX/XX/XX	1. Alkaline chemical injection pump still energized even if control de-energized pump — Call Service.
31. Alarm sounds and screen displays: ALARM: ACID PUMP IS DEFECTIVE Printer records: * ALARM ACID PUMP IS DEFECTIVE HH:MM:SS XX/XX/XX	1. Acid chemical injection pump still energized even if control de-energized pump — Call Service.
32. Alarm sounds and screen displays: ALARM: pH INJECTION TIME TOO LONG Printer records: * ALARM pH INJECTION TIME TOO LONG HH:MM:SS XX/XX/XX	1. Chemical container empty. — Replace empty container. 2. pH injection time longer than 15 minutes. — Call Service.

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